Meadow Ridge Conservation Park
Habitat Management Plan
10/24/2019

DRAFT

Site information

Address: 4002 Meadow Valley Drive. The park is contiguous with Meadow Ridge neighborhood park. The Mendota Unit of Cherokee Marsh Conservation Park is located to the north, directly across Sauthoff Road. The trail system links these two parcels and provides access to both from Sauthoff Road.

Acreage: 10.3 acres

Site summary: This park was previously a farm that was active through the 1960s. It features a sandstone knob with two abandoned quarry sites on the southwest slope, and a bear-shaped effigy mound on the top. Prairie plantings have been established in former row crop fields in the west end of the park, and in former pasture on the top of the hill. Slopes on the knob support oak woodland, except for the east side, where the park is bordered by houses.

Adjacent lands: Adjacent natural areas and areas of ecological significance include Cherokee Marsh - Mendota Unit, Meadow Ridge neighborhood park, a storm water greenway and pond, and undeveloped areas on the grounds of the Mendota Mental Health Institute to the south.

Alder district: District 18 – Alder Rebecca Kemble

Conservation values

The dominant natural feature of Meadow Ridge is the sandstone knob that supports oak woodland and tallgrass prairie habitat. The park also protects a Native American burial mound that has been catalogued by the State Historic Preservation Office. See Appendix B for more information, contained in the Burial Mound Management Plan for this park.

The north slope of the hill is very mesic and supports Dutchman's breeches and spikenard, while the west slope supports relatively drier woodland species such as elm-leaved goldenrod and common oak sedge. Much of the woodland understory has been invaded by bush honeysuckle, and the herbaceous plant community on the south slope is degraded or absent.

Two bird species listed as special concern in Wisconsin have been documented in the park: Common Goldeneye and Golden-winged Warbler. These are both designated as Species of Greatest Conservation Need (SGCN) in Wisconsin's Wildlife Action Plan (DNR 2015). The park is within the winter range of the Common Goldeneye, and it was documented in December, likely observed in the adjacent storm water pond when it was. The Golden-winged Warbler breeds farther north, and is often observed migrating through Dane County in May and September. Appendix C contains lists of bird and vascular plant species observed at the park.

The park, along with the majority of Madison, is located within a "high potential zone" for the federally-endangered Rusty Patched Bumble Bee (*Bombus affinis*), and its presence should be assumed within this area, which has been delineated by the USFWS (2019).

Madison Parks' Land Management Plan (2017) outlines the main habitat types found in the City's conservation parks. These general types can be further classified into "Recognized Natural Communities" described by the Wisconsin Natural Heritage Inventory (2018). This helps us to provide more technical and specific restoration targets based on the nuances of each park. The main habitat types that occur at Meadow Ridge are below, with the appropriate corresponding NHI-recognized natural communities listed under each one.

Tallgrass prairie (Madison Parks)
Dry-Mesic Prairie (NHI)
Mesic Prairie (NHI)

Oak savanna / Oak woodland (Madison Parks)
Oak Woodland (NHI)
Southern Dry Forest (NHI)

Deciduous Forest (Madison Parks)
Southern Dry-Mesic Forest (NHI)
Southern Mesic Forest (NHI)

Appendix A.2 is a map showing the location of community types within the park.

Ecological threats

Invasive species – Much of the woodland understory is dominated by bush honeysuckle, and Asian bittersweet, Japanese hedge parsley, and garlic mustard also occur. The prairie in the west end of the park has a considerable population of crown vetch.

Fire suppression – Much of the oak woodland in the park is overgrown and infested with non-native shrubs. The canopy has closed in many areas, and leaf litter and garlic mustard occupy the ground layer, rather than native sedges and forbs.

White-tailed deer – The adjacent Cherokee Marsh – Mendota Unit exhibits severely browsed shrubs and herbaceous plants, and great numbers of deer are frequently encountered at Meadow Ridge. Like many other natural areas throughout Madison's North Side deer have become overabundant due to low hunting pressure and relatively low natural mortality.

Conservation goals

1. *Restore and maintain oak woodland.*
   Removal of invasive shrubs and the re-introduction of fire has begun to restore the appropriate structure and species composition to the fire-suppressed woodland. Priorities for management include expanding this work to the remainder of the woodland in the park and promoting oak regeneration.

2. *Maintain native herbaceous plant diversity and natural community vegetation structure.*
   Management objectives and prescriptions should consider both species and habitat diversity, and ensure that actions result in a heterogeneous landscape. Efforts to control the density of woody species should ensure that native shrubs are retained. This may especially benefit the state-listed special concern Golden-winged Warbler, which occurs here.

3. *Promote habitat for Rusty Patched Bumble Bee (Bombus affinis)*
   Management activities should be reviewed to ensure they avoid negative impacts to this species, and emphasis should be placed on improving and increasing habitat for it.

4. *Monitor the various major taxonomic groups in order to inform management decisions.*
   Increased monitoring is a broader goal of the Conservation Park program. At Meadow Ridge, efforts should focus on quantifying plant species richness and diversity. Bird species and Rusty Patched Bumble Bee populations should be monitored and tracked as well.

Management considerations

Madison Parks' vision is "to provide the ideal system of parks, natural resources and recreational opportunities which will enhance the quality of life for everyone." Ord. 8.40, Preservation of Conservation Parks, includes, "It is important to the residents of Madison that the City preserve Madison's native landscapes, its plant and animal populations for residents' careful use and full enjoyment."

In pursuit of these goals, we strive to balance ecological management needs with the needs of the community. Ecological management at Meadow Ridge should pay specific attention to the following:

Burial mound – Management activities must prevent damage or disturbance to the burial mound. Woody vegetation on the mound should be cleared by hand, and vehicles and equipment should be kept a minimum of 25 feet from the edge of the mound.

Smoke management – Residential development to the east and north limits opportunities for burning this site. Care must be taken to minimize smoke impacts to these nearby residences, and also to residences along Veith Road to the west.

Management history

The lower prairie, west of the hill, was established in 1999. The prairie on the top of the hill was inter-seeded in 2000.

In recent years, Parks staff have begun to systematically control Japanese hedge parsley and Asian bittersweet. They have also controlled bush honeysuckle to reclaim the prairie planting on the hilltop from encroachment by this species. A prescribed burn conducted in April 2018 was very effective in reducing understory honeysuckle in the oak woodlands, and re-sprouts were sprayed that summer.

Volunteers coordinated by the Friends of Cherokee Marsh regularly assist with Japanese hedge parsley control, and have hand-cleared brush from the burial mound.

The hiking trail was resurfaced and re-contoured in 2018 and 2019 to correct erosion issues on the north slope.

Management units

The park can be divided into four management units. See Appendix A.3 for a map of management units.

North Slope (1 ac) Mesic oak woodland on very steep slopes created by the construction of Sauthoff Road. Sandy soils are very prone to erosion and several gullies have formed in recent years. Aspect and likely a history of little or low-intensity fire support several mesic herbaceous species.

Woodland Unit (3 ac) Dry-mesic oak woodland of varying quality. The western edge of this unit contains the most intact plant community. The south slope of the hill supports an oak-hickory overstory, but the understory is dominated by large bush honeysuckle. The areas below the quarry faces are occupied by black walnut, Siberian elm and white mulberry. A mesic ravine is located between the two quarries, and supports large hackberry, basswood and sugar maple.

Upper Prairie (2 ac) Prairie planting on former hayfield or pasture. Recent efforts have reduced woody encroachment here.

Lower Prairie (4 ac) Prairie planting that extends southward though neighborhood park to the storm water pond. This unit is currently rough-mowed every other year along with the rest of the managed meadow. A volunteer-monitored Bluebird Trail is located in the prairie. The western edge of the prairie is bordered by mesic deciduous forest.

Prescriptions/Options

Options for three levels of management are presented in this plan: maintenance only, moderate restoration, and extensive restoration.

Management Level 1 “maintenance only” is NOT recommended for any of the conservation parks at this time. Restricting ecological management to areas recently treated is not sustainable within the context of existing adjacent invasive species populations and dispersal corridors, both within and outside of a given park.

Management Level 2 “moderate restoration” is based on the current Conservation section budget, staff capacity, and work accomplished in the past two years. This is the level at which we currently operate.

Management Level 3 “extensive restoration” could only be accomplished with increased staffing in the Conservation Parks section, in order to conduct the in-house work outlined below, as well as manage and volunteers and Capital Improvement Project contracts.

Under management level 3, costs will eventually decrease then plateau, as all management units within a park come under active management. With initial restoration completed, treatment areas and the park as a whole, will transition from a “restoration phase” to a “maintenance phase”. Once a healthy, diverse, native plant community has become established park-wide, it can be maintained with much fewer resources. Internal ecological threats will have been minimized, and regular burning and occasional control of new populations of invasive species will be sufficient to sustain the natural area at its new equilibrium. Only then will the “maintenance only” option be successful.

Management Level 1 (maintenance only)

Objectives:

- Follow-up effort to control invasive species only in areas previously treated.
- Burn Woodland and Upper Prairie units on 4-year return interval.
- Mow brush in prairies to control woody encroachment.

Annual Budget Estimate:

Task	Annual cost
Invasive species treatments (spring, summer)	$400
Mow trails	$1,200
Brush mowing	$350
Invasive species treatments (fall)	$450
Burns (average one every other year)	$2,000
Totals	**$4,400**

Specific Management Unit Prescriptions:

Timeline	Unit(s)	Task
Spring 2020	Woodland	Rx burn
Spring 2020	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Fall 2020	Woodland	Cut/treat or foliar spray Asian bittersweet
Fall 2020	Upper Prairie	Mow brush
Spring 2021	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley (staff and volunteers)
Fall 2021	Woodland	Cut/treat or foliar spray Asian bittersweet
Fall 2021	Lower Prairie	Mow brush
Spring 2022	Upper Prairie	Rx burn
Spring 2022	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Fall 2022	Woodland	Cut/treat or foliar spray Asian bittersweet
Fall 2022	Lower Prairie	Mow brush
Spring 2023	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley (staff and volunteers)
Fall 2023	Woodland	Cut/treat or foliar spray Asian bittersweet
Fall 2023	Lower Prairie	Mow brush
Spring 2024	Woodland	Rx burn
Spring 2024	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)

Timeline	Unit(s)	Task
Fall 2024	Woodland	Cut/treat or foliar spray Asian bittersweet
Fall 2024	Upper Prairie	Mow brush

Possible Burn Schedule – average one burn every other year:

year	1	2	3	4	5	6	7	8	9	10
Woodland	x				x				x	
Upper Prairie			x				x			

Management Level 2 (moderate restoration)

Objectives:

- Follow-up effort to control invasive species on acres previously treated.
- Expand oak woodland restoration throughout remainder of woodland.
- Collect and sow native seed to increase diversity and augment native plant community.
- Burn Woodland and prairie units on 3-year return interval.
- Mow brush in prairies to control woody encroachment.
- Survey for Rusty Patched Bumble Bee.

Annual Budget Estimate:

Task	**Annual cost**
Invasive species treatments (spring, summer)	$700
Mow trails	$1,200
Trail improvements (gravel, water bars, etc.)	$500
Brush mowing	$250
Collect and sow native seed	$250
Invasive species treatments (fall)	$1,100
Burns (average one burn per year)	$4,000
totals	**$8,000**

Specific Management Unit Prescriptions:

Timeline	**Unit(s)**	**Task**
Spring 2020	Woodland	Rx burn
Spring 2020	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Summer 2020	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer/Fall 2020	Woodland Upper Prairie	Collect and sow native seed (staff and volunteers)
Fall 2020	Woodland	Cut/treat or foliar spray Asian bittersweet; cut/treat honeysuckle
Fall 2020	Lower Prairie	Mow brush
Spring 2021	Upper Prairie	Rx burn
Spring 2021	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Summer 2021	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer/Fall 2021	Woodland Upper Prairie	Collect and sow native seed (staff and volunteers)
Fall 2021	Woodland	Cut/treat or foliar spray Asian bittersweet; cut/treat honeysuckle
Spring 2022	Lower Prairie	Rx burn
Spring 2022	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley (staff and volunteers)
Summer 2022	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer 2022	Lower Prairie	Spray crown vetch

Timeline	Unit(s)	Task
Summer/Fall 2022	Woodland Upper Prairie	Collect and sow native seed (staff and volunteers)
Fall 2022	Woodland	Cut/treat or foliar spray Asian bittersweet; cut/treat honeysuckle
Fall 2022	Upper Prairie	Mow brush
Spring 2023	Woodland	Rx burn
Spring 2023	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Summer 2023	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer 2023	Lower Prairie	Spray crown vetch
Summer/Fall 2023	Woodland Upper Prairie Lower Prairie	Collect and sow native seed (staff and volunteers)
Fall 2023	Woodland	Cut/treat or foliar spray Asian bittersweet
Fall 2023	Lower Prairie	Mow brush
Spring 2024	Upper Prairie	Rx burn
Spring 2024	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Summer 2024	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer 2024	Lower Prairie	Spray crown vetch
Summer/Fall 2024	Woodland Upper Prairie Lower Prairie	Collect and sow native seed (staff and volunteers)
Fall 2024	Woodland	Cut/treat or foliar spray Asian bittersweet

Possible burn schedule – average one burn per year:

year	1	2	3	4	5	6	7	8	9	10
Woodland	x			x			x			x
Upper Prairie		x			x			x		
Lower Prairie			x			x			x	

Management Level 3 (extensive restoration)

Objectives:

- Follow-up effort to control invasive species on acres previously treated.
- Expand oak woodland restoration throughout remainder of woodland.
- Eliminate crown vetch from lower prairie.
- Purchase and install native seed mixes and native plugs to increase diversity and augment native plant community.
- Burn Woodland on 3-year return interval and prairie units on 2-year return interval.
- Survey for Rusty Patched Bumble Bee.

Annual Budget Estimate:

Task	**Annual cost**
Invasive species treatments (spring, summer)	$2,000
Contracts for invasive species control	$2,000
Mow trails	$1,200
Trail improvements (gravel, water bars, etc.)	$700
Invasive species treatments (fall)	$2,100
Woody debris reduction	$1,050
Burns (average one burn per year)	$4,000
Purchase and install native seed mix and plugs	$2,000
totals	**$15,050**

Capital Improvement Project funding is anticipated in 2021.

Specific Management Unit Prescriptions:

Timeline	**Unit(s)**	**Task**
Spring 2020	Upper Prairie	Rx burn
Spring 2020	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Summer 2020	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer/Fall 2020	Woodland Upper Prairie	Collect and sow native seed (staff and volunteers)
Fall 2020	Woodland	Cut/treat or foliar spray Asian bittersweet; cut/treat honeysuckle
Spring 2021	Woodland Lower Prairie	Rx burn
Spring 2021	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Summer 2021	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer 2021	Lower Prairie	Spray crown vetch (contract)
Summer/Fall 2021	Woodland	Purchase and install native seed mix and plugs (staff and volunteers)
Fall 2021	Woodland	Cut/treat or foliar spray Asian bittersweet; cut/treat honeysuckle
Fall 2021	Woodland	Cut/treat honeysuckle (contract)
Spring 2022	Upper Prairie	Rx burn

Timeline	Unit(s)	Task
Spring 2022	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Summer 2022	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer 2022	Lower Prairie	Mow and spray crown vetch (contract)
Summer/Fall 2022	Upper Prairie	Purchase and install native seed mix and plugs (staff and volunteers)
Fall 2022	Woodland	Cut/treat or foliar spray Asian bittersweet
Spring 2023	Lower Prairie	Rx burn
Spring 2023	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Summer 2023	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer 2023	Lower Prairie	Spray crown vetch (staff)
Summer/Fall 2023	Lower Prairie	Purchase and install native seed mix (staff and volunteers)
Fall 2023	Woodland	Cut/treat or foliar spray Asian bittersweet
Spring 2024	Woodland Upper Prairie	Rx burn
Spring 2024	Woodland North Slope Upper Prairie	Spray or hand pull garlic mustard and Japanese hedge parsley; spray woody re-sprouts (staff and volunteers)
Summer 2024	All	Survey for Rusty Patched Bumble Bee (volunteers)
Summer 2024	Lower Prairie	Spray crown vetch
Summer/Fall 2024	Woodland Upper Prairie Lower Prairie	Purchase and install native seed mix and plugs (staff and volunteers)
Fall 2024	Woodland	Cut/treat or foliar spray Asian bittersweet

Possible burn schedule – average one burn per year:

Burn units at Meadow Ridge are arranged so that a prairie unit can always be combined with the Woodland unit, allowing a single burn operation in years when the Woodland Unit is burned.

year	1	2	3	4	5	6	7	8	9	10
Woodland		x			x			x		
Upper Prairie	x		x		x		x		x	
Lower Prairie		x		x		x		x		x

Monitoring and Evaluation

Measuring results is critical to determining success. Parks conservation staff have developed a monitoring plan to begin to measure and track ecological health and the success of restoration efforts in the conservation parks. Refer to Appendix D for an outline of this plan.

While the Conservation Parks section currently has very limited capacity to increase monitoring efforts, we hope to expand our reach by working with the US Fish and Wildlife Service, the Wisconsin Department of Natural Resources, the University of Wisconsin at Madison, and independent volunteers. Both formal research and citizen science will provide crucial information on which to base management decisions. With this in mind, basic, periodic monitoring can be performed by staff or volunteers to collect data about mammals, birds, reptiles and amphibians, invertebrates, and vascular plants. A few key metrics that should be used at Meadow Ridge include plant and animal diversity, and abundance of invasive species.

As part of a wider monitoring program, the following tasks should be completed:
- Update/verify plant and animal species lists.
- Conduct surveys for Rusty Patched Bumble Bee using the USFWS protocol at: https://www.fws.gov/midwest/endangered/insects/rpbb/surveys.html
- Sample plant communities to collect data on richness and cover, then calculate diversity and floristic quality indices.
- Survey oak regeneration.
- Conduct photo monitoring on 3-year intervals.

See Appendix A.5 for a map of planned plant monitoring transects and photo monitoring stations.

References

Madison Parks. 2017. *Land Management Plan: City of Madison Parks*. City of Madison, Parks Division, Madison.

U.S. Fish and Wildlife Service. 2019. Endangered Species: Rusty Patched Bumble Bee. https://www.fws.gov/midwest/endangered/insects/rpbb/index.html Accessed May 15, 2019.

Wisconsin Department of Natural Resources. 2018. Wisconsin's Natural Communities. http://dnr.wi.gov/topic/EndangeredResources/Communities.asp Accessed February 8, 2018.

Document History

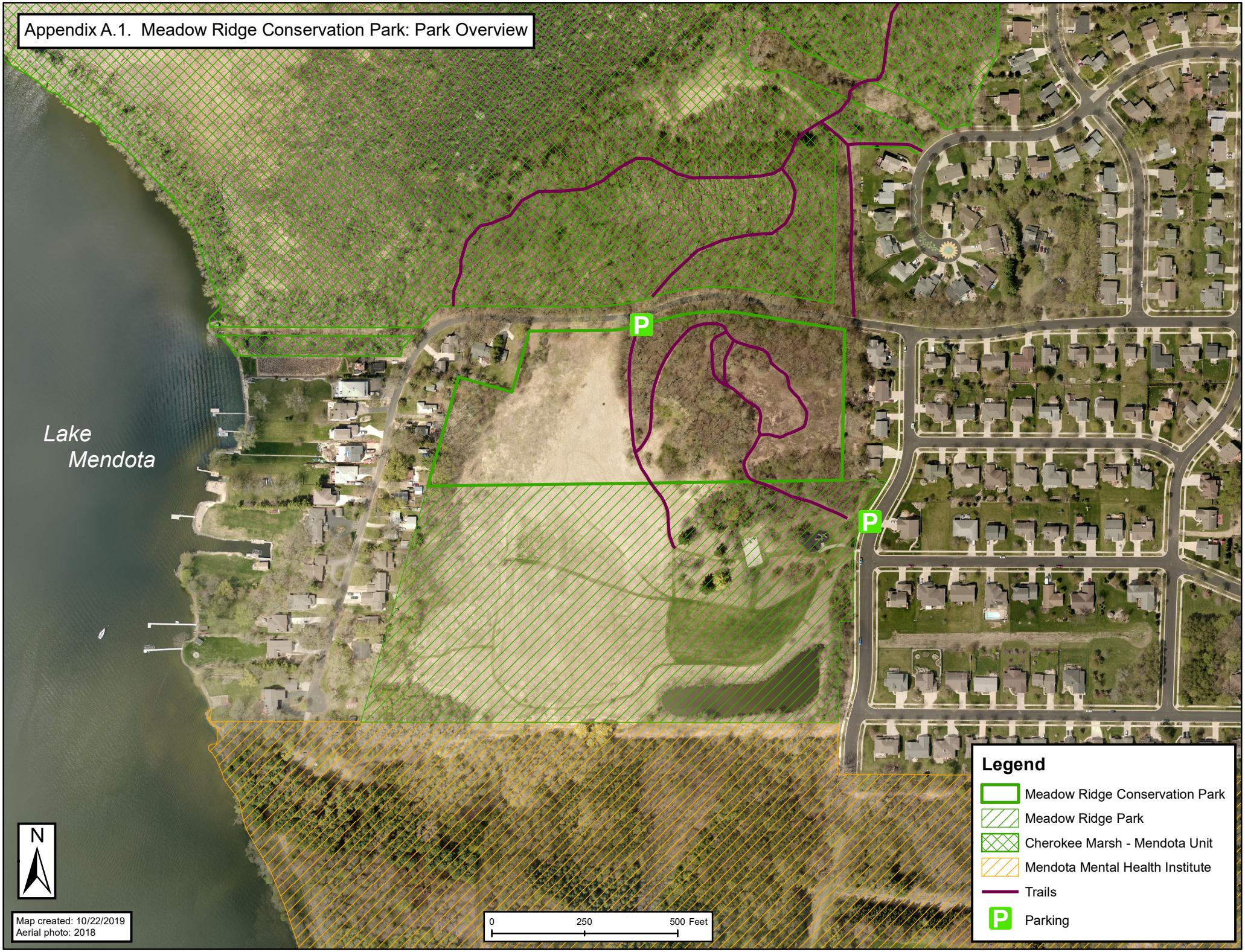
This Habitat Management Plan is consistent with Madison Parks' Land Management Plan. This Habitat Management Plan has 5-year lifespan, and should be reviewed yearly. It can be revised whenever new information is discovered. If no changes have been made, it should be updated in its 5th year.

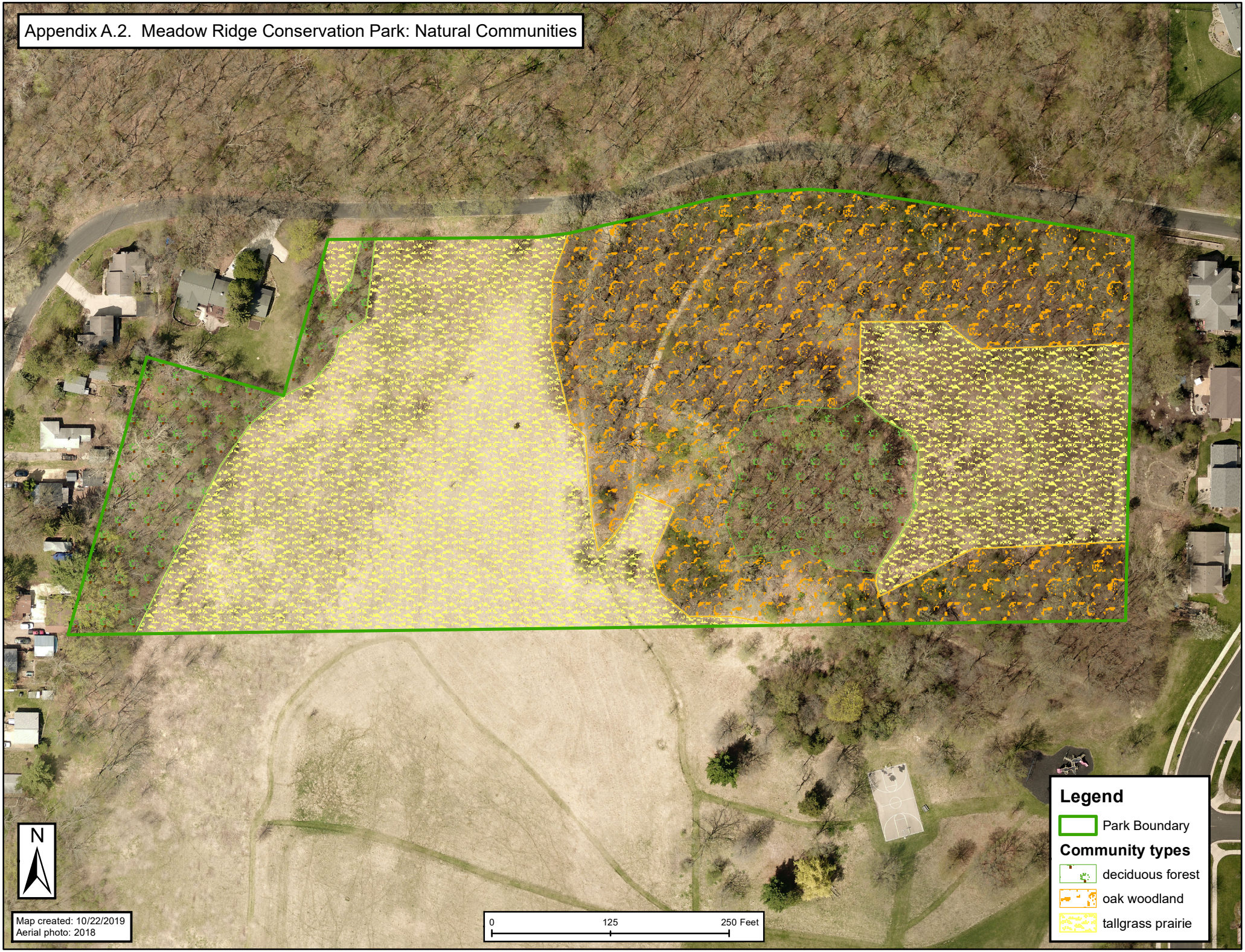
Version	Description
10/24/2019	First draft, presented to HSC in November 2019

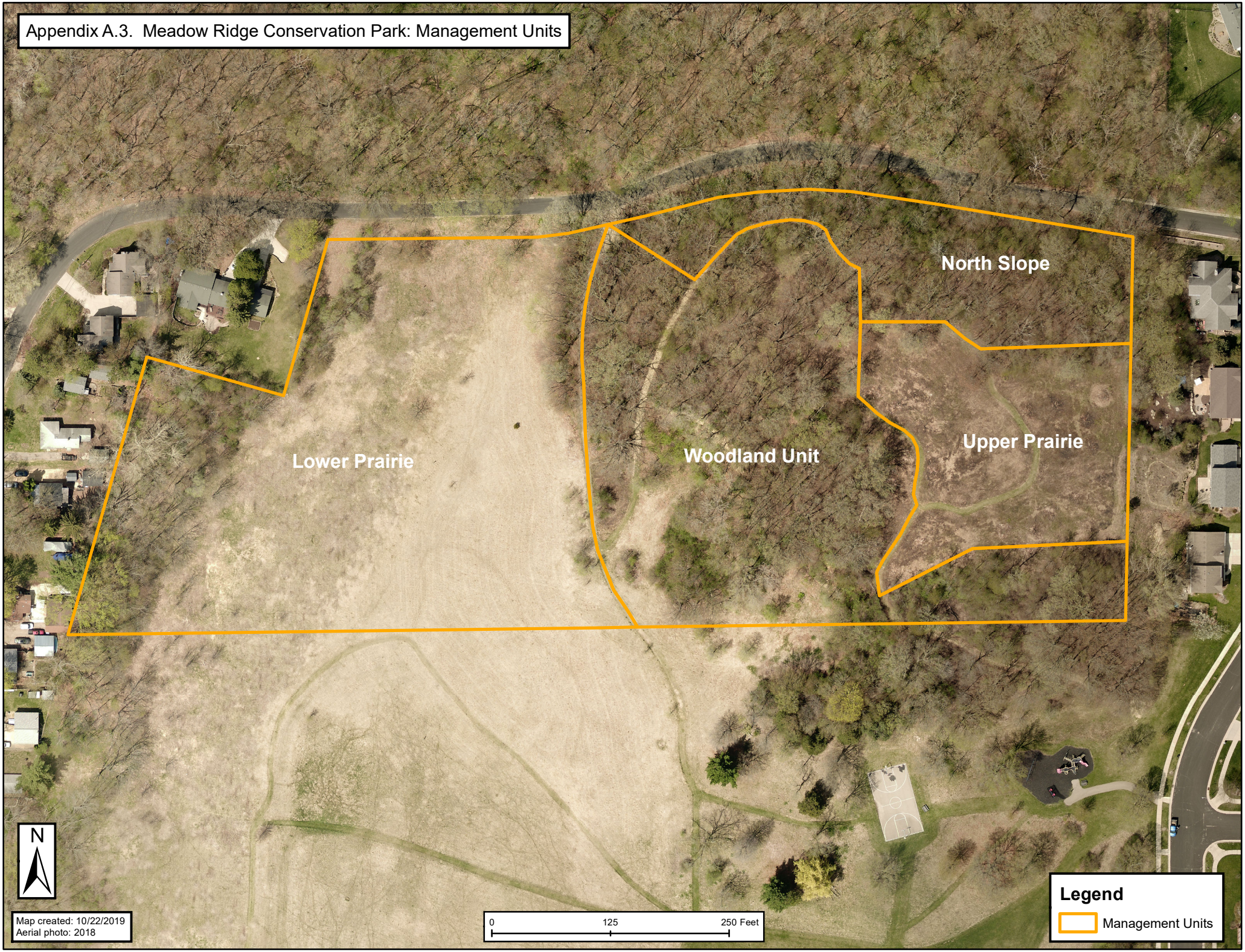
Appendices

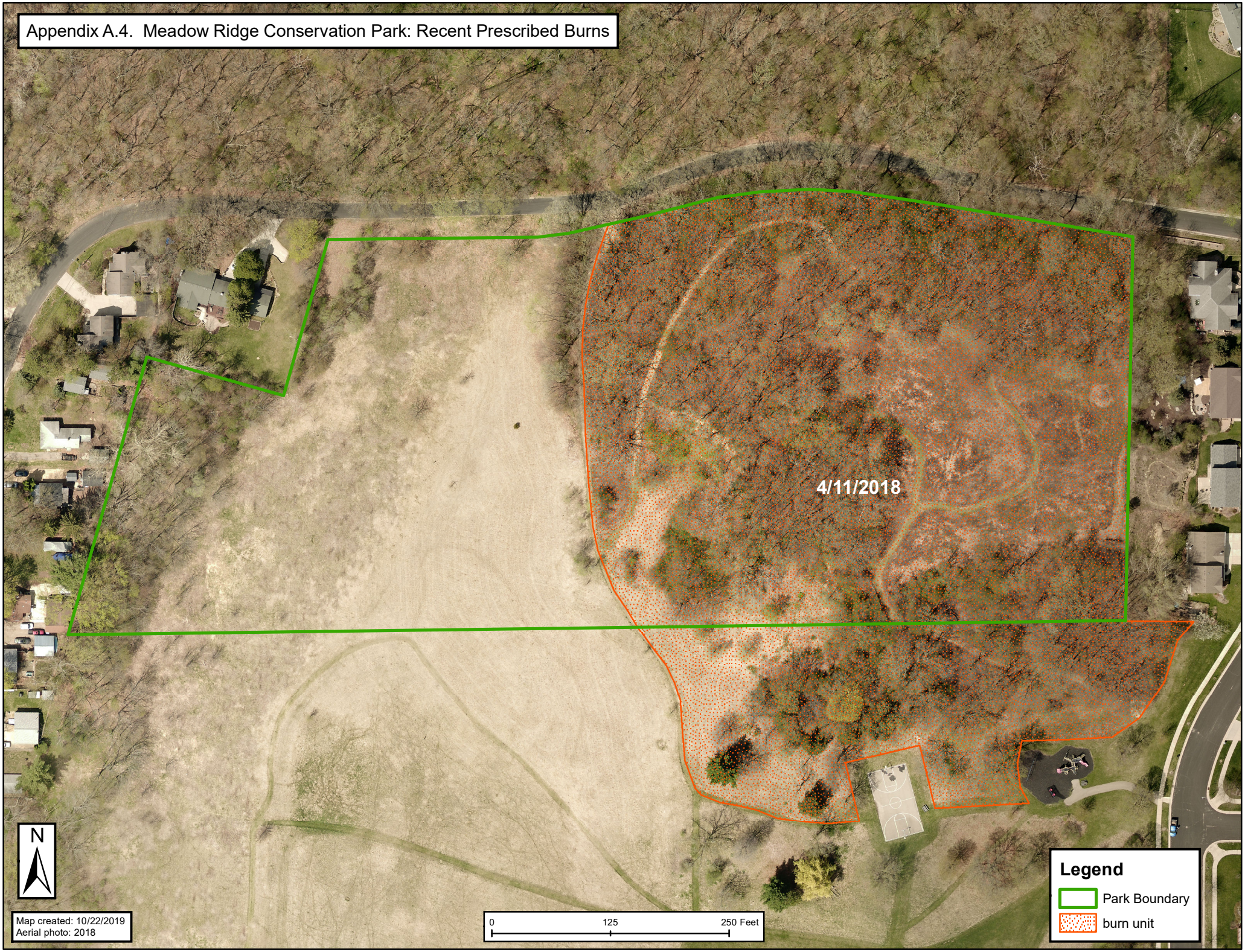
A. Maps
   - A.1 Park Overview
   - A.2 Natural Communities
   - A.3 Management Units
   - A.4 Prescribed Burns
   - A.5 Monitoring

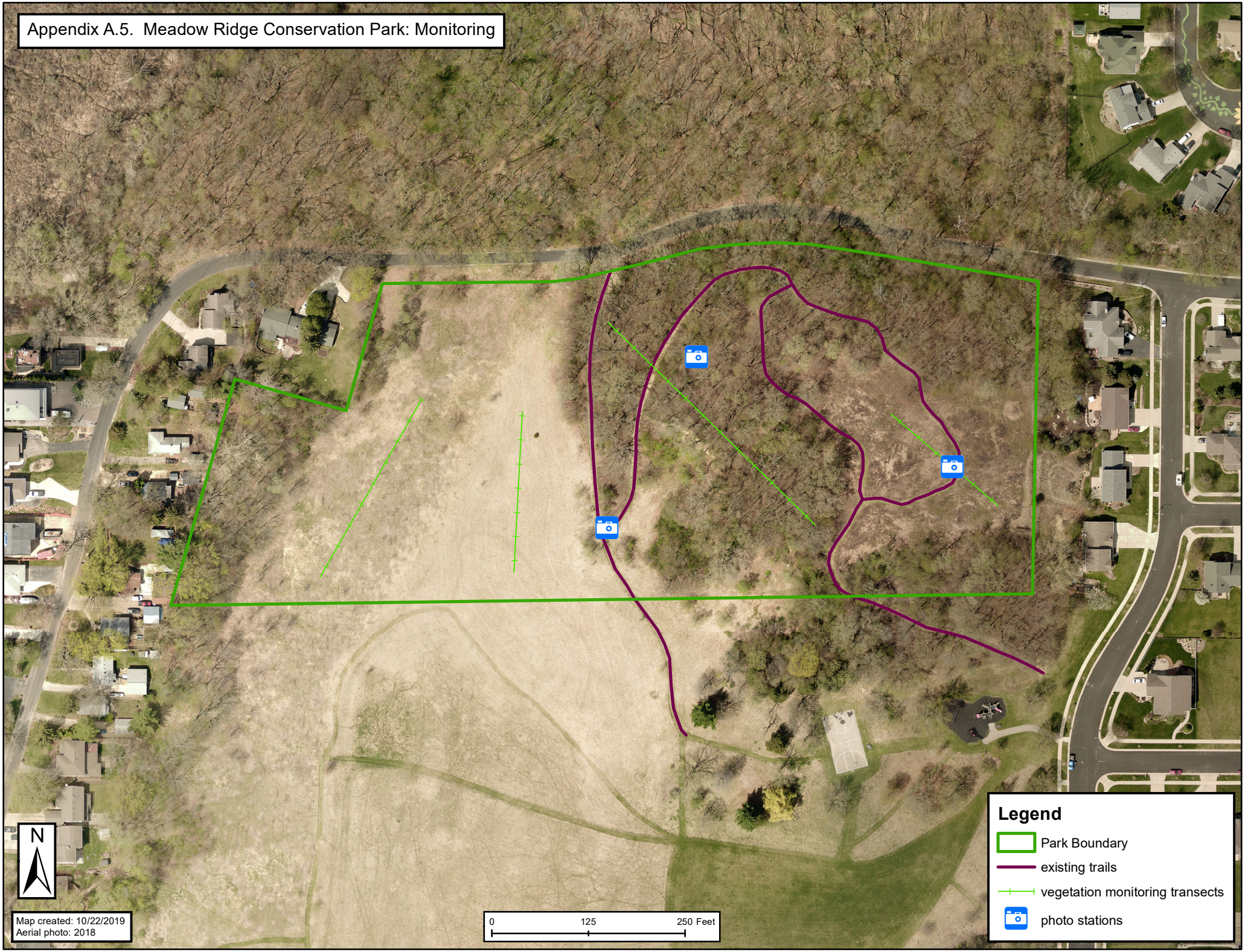
B. Meadow Ridge Conservation Park - Burial Mound Management Plan
C. Species Lists
D. Conservation Parks Monitoring Plan


Appendix A.1. Meadow Ridge Conservation Park: Park Overview
Lake Mendota
P
P
N
Map created: 10/22/2019
Aerial photo: 2018
0
250
500 Feet
Legend
Meadow Ridge Conservation Park
Meadow Ridge Park
Cherokee Marsh - Mendota Unit
Mendota Mental Health Institute
Trails
Parking


Appendix A.2. Meadow Ridge Conservation Park: Natural Communities
Legend
Park Boundary
Community types
deciduous forest
oak woodland
tallgrass prairie
N
Map created: 10/22/2019
Aerial photo: 2018
0
125
250 Feet


Appendix A.3. Meadow Ridge Conservation Park: Management Units
North Slope
Upper Prairie
Woodland Unit
Lower Prairie
N
Map created: 10/22/2019
Aerial photo: 2018
0
125
250 Feet
Legend
Management Units


Appendix A.4. Meadow Ridge Conservation Park: Recent Prescribed Burns
4/11/2018
N
Map created: 10/22/2019
Aerial photo: 2018
0
125
250 Feet
Legend
Park Boundary
burn unit


Appendix A.5. Meadow Ridge Conservation Park: Monitoring
N
Map created: 10/22/2019
Aerial photo: 2018
0
125
250 Feet
Legend
Park Boundary
existing trails
vegetation monitoring transects
photo stations

Meadow Ridge Conservation Park
Burial Mound Management Plan
10/21/2019

DRAFT

Site information

Park address:	4002 Meadow Valley Drive. The park is contiguous with Meadow Ridge neighborhood park.
Mound location:	North central portion of park, on west edge of summit of hill.
Mound description:	Bear shaped effigy, oriented with head pointing SW toward Lake Mendota. Mound is approximately 3 feet tall, 77 feet long, and 31 feet wide.
Cataloged burial site name:	Veith Bear Mound DA-0259/BDA-0264
Alder district:	District 18 – Alder Rebecca Kemble

Introduction

This management plan is consistent with the "Statements of Policies and Guidelines for a Maintenance Plan for Burial Mounds in Madison Parks", which was approved by the Board of Park Commissioners in October 2019. Appendix A contains a copy of this document.

Description and recent history

The Wisconsin Historical Society has cataloged this burial mound as Veith Bear Mound DA-0259/BDA-0264. The "Notice of Location of Catalogued Burial Site", registered with the Dane County Register of Deeds as document #5324200, is attached in Appendix B. Brown (1912) provided a detailed description of the mound and surrounding area in his work on Lake Mendota mounds.

The mound is a bear shaped effigy, oriented with the head pointing SW toward Lake Mendota. The feet face northwestward, the back faces southeastward. The mound is approximately 3 feet tall and 77 feet long, head to tail. The entire effigy is approximately 31 feet wide, from bottom of feet to top of back. The body is 24 feet wide (belly to back).

A portion of the mound had been excavated and presumably looted sometime in the 20th century. This was reported to the State Historical Society in December 1988. Parks staff filled the excavation and restored the contour of the mound in 2001. The fill is underlain by plastic sheeting and at least one coin dated 2001.

Volunteers cleared brush from the mound in November 2017 by hand cutting and applying herbicide to the stumps. The area was included in a prescribed burn in spring 2018.

Current Conditions

Photos documenting the current conditions of this mound are included in Appendix C. Herbaceous vegetation on the mound is dominated by elm-leaved goldenrod and white snakeroot. Giant hyssop, black raspberry and garlic mustard also occur.

Two 8-inch diameter trees are rooted on the southwest edge of the front leg. A third is rooted between the legs. A larger (>14 inch diameter) red oak is rooted just under the bear's chin/throat. About 20 trees

have a dripline that overlaps the mound or the 20 foot-buffer surrounding it. Species include red oak, white oak, shagbark hickory, hackberry, and black cherry.

A gravel hiking trail is located approximately 5 feet from the NE edge of the mound.

Management and maintenance

Pursuant to the guidelines, the following specific practices will be employed to maintain the burial mound at Meadow Ridge Conservation Park.

1. Inspection
   The bear mound will be inspected approximately every two weeks during the growing season, when staff are on site to mow/maintain the hiking trails in the park. During the dormant season, the mound will be inspected at least monthly, as well as after major storm or wind events.

2. Invasive species
   Invasive species such as garlic mustard and Japanese hedge parsley will be controlled with foliar herbicide applications to avoid soil disturbance.

3. Tree care
   Overhanging trees will be inspected twice per year to detect dead branches, lean or rot. Results will be documented and any potential failure will be proactively removed when the ground is frozen, and preferably when there is at least 6 inches of snow cover. Branches will be pruned and, if necessary, trees will be removed.

   The three 8-inch diameter trees near the west side of the mound will be removed in early 2020 when the ground is frozen and there is at least 6 inches of snow cover. Stumps will be cut flush with the ground and herbicide will be applied.

   The large tree near the chin/throat will be monitored and removed in the future when it starts to die.

4. Mowing / Vegetation management
   Native vegetation on the mound will be burned at least once every three years along with the surrounding habitat management unit. If stems of woody species become established and grow to ½ inch in diameter between burns, or are not controlled by a burn, they will be cut with a hand-held power brush saw, and stumps will be dabbed with herbicide.

5. Trails
   A portion of the hiking trail is currently located 5 feet away from the edge of the mound. This segment will be officially closed and abandoned in December 2019. A new gravel-surfaced path will be constructed to the east of the current location in November 2019. The new path will be outside the limits of the catalogued burial site. Signs notifying park users of the trail closure will be posted in November 2019.

6. Signs
   There are no signs located within 20 feet of the mound.

References

Brown, C.E. 1912. Undescribed Groups of Lake Mendota Mounds. *The Wisconsin Archeologist.* Vol. 11, no. 1. pp. 25-26. Wisconsin Archeological Society, Milwaukee. Accessed October 21, 2019 on GoogleBooks: https://books.google.com/books?id=wrEWAQAAMAAJ&pg=PA26#v=onepage&q&f=false

Rusch, L. undated. *Results of an Archaeological Reconnaissance Survey for the Muller Property park Development, Madison, Wisconsin.* (excerpt)

Appendices

A. Statements of Policies and Guidelines for a Maintenance Plan for Burial Mounds in Madison Parks
B. Notice of Location of Catalogued Burial Site
C. Photos of current conditions as of 10/17/2019
D. Map
E. Sample sign notifying park users of trail closure

Appendix A.

STATEMENTS OF POLICIES AND GUIDELINES FOR A MAINTENANCE PLAN FOR BURIAL MOUNDS IN MADISON PARKS

AUTHORIZATION

The Madison Board of Park Commissioners is the approving authority for determining the appropriateness and acceptance of a maintenance plan for Burial Mounds in Madison Parks. The Parks Division has received direction from representatives of the Ho-Chunk Nation as to the proper maintenance of individual mound systems and incorporated the information into this policy. The policy is intended to clearly outline a maintenance plan for the Burial Mounds located in the Madison Parks system. It provides procedures and guidelines to assure that the mounds are treated with the utmost respect and responsibly managed in a manner that protects the integrity of the mounds at all times.

DEFINITIONS: Protection of earth works and burial markers are protected by Wisconsin State Statute 157.70. It stipulates that there may be no disturbance of the burial mound or within the legal buffer of 10 feet from the perimeter. Madison Parks maintains a buffer of no soil disturbance of 20 feet total from the mound perimeter.

Burial Mounds in Madison Parks:

- Conservation Parks: Elvehjem Sanctuary, Cherokee Marsh North Unit, Edna Taylor
- General Parks: Hudson, Burrows, Vilas, Bear Mound
- Edgewood Park and Pleasure Drive
- Forest Hill Cemetery

PROCEDURE

1. Burial mounds will be inspected on a regular basis

2. Prescribed management plans will be established for individual mounds based on site conditions to manage vegetative material.

3. Established trees growing on and surrounding mounds will be inspected regularly and managed to prevent damage to the mounds.

4. Regular maintenance will ensure proper air flow and prevent establishment of plant material that may threaten the integrity of the mound.

5. No signage, trails or other obstructions will be placed within 20 feet of the base of the mound.

6. If a mound is ever disturbed, staff will follow outlined protocol regarding soil disturbance from tree limbs (cut flush and remove brush) and animals (remove and fill hole by hand with soil). Outreach to Burial Sites Preservation staff as needed.

GUIDELINES FOR THE MAINTENANCE OF MADISON PARKS BURIAL MOUNDS

1. Mound inspection:
   a) Visual inspection of the mounds when doing routine mowing in the surrounding parkland, approximately every 2 weeks.
   b) Inspect for downed limbs or any damage to the mounds and report back to the Supervisor if any damages are noted.
   c) Inspect for animal burrows. Remove animals from area, replace soil into the hole and compress by hand.

2. Manage invasive species to prevent degradation of the mounds and to promote establishment of native plants:
   a) Conduct prescribed burns on an annual/semi-annual basis on all burial mounds according to individual mound plans.
   b) Hand cutting and removal of any woody growth and weeds, treat directly with an herbicide as needed.
   c) Introduce native forbs and grasses as seeds by hand only.
   d) Ensure that there is no soil disturbance.

3. Tree care:
   a) Assess tree health on and with driplines within mound area on a regular basis.
   b) Trim and thin out deadwood in trees in close proximity to the mounds in order to prevent limbs dropping and allow more sunlight to promote healthy turf growth.
   c) Remove all established trees growing on or within the buffer area footprint of the mounds that are 14 inches in diameter at breast height or (dbh) or less by hand and treat with an herbicide.
   d) Remove dying or severely damaged trees proactively before they uproot and disturb the integrity of the mound.
   e) Cut stumps flush with the ground, grubbing is never allowed.
   f) Care will be taken to avoid dropping large limbs on the mound which could cause damage to the mound surface.
   g) Remove trees that endanger the mounds during the latter winter months only when the ground is frozen and there's plenty of frost and snow cover to protect them.
   h) No heavy equipment is allowed within the mounds and its buffer area.

4. Mowing operations performed according to restoration plans for individual mound systems:
   a) Bi-monthly mowing will be done with a walk behind brush type mower set high to prevent scalping of the ground and to limit woody plant growth. This will reduce soil compaction and disruption.
   b) The vegetation on the mound will be allowed to grow taller than managed turf areas, to discourage human foot traffic.

5. Trails maintenance:
   a) Document sites where trails and sidewalks are in conflict due to proximity with the preservation of the mounds with pictures and written documentation to be kept in the Parks PA Common folder under Burial Mound Maintenance.
   b) Move existing trails 20 feet away from the mounds.
   c) Work with the Burial Sites Preservation staff in the Wisconsin Historical Society to comply with State statutes.
   d) Install educational signage with a cultural component to redirect foot traffic at trail heads in order to redirect foot traffic.

6. Signs within the 20 foot buffer zone will be removed.
   a) The WI State Historical Society will assist to determine if the mound site has been cataloged and will need to be considered if a request to disturb permit is required.
   b) A State qualified Archeologist must be on site for sign removals and other soil disturbance activities in conformance of Wisc. Stat. 157.70.

Appendix B.

WISCONSIN HISTORICAL SOCIETY

27 June 2017

Dane County Parks Division
Attn: Darren Marsh, Parks Director
5201 Fen Oak Dr. Ste 208
Madison WI 53718-8812

Dear Mr. Marsh:

The Wisconsin Historical Society has submitted documents to the Register of Deeds for your County, recording a catalogued burial site on your property, known as Vieth Bear Mound (DA-0259/BDA-0264) located in Section 27 of the City of Madison in accordance with Wis. Stat. §157.70(2)(a), Wisconsin's Burial Sites Preservation law.

State law requires the Wisconsin Historical Society to identify and catalogue all burial sites in the State. The purpose of the law is to assure that all human burials are granted equal treatment and protection without reference to ethnic origins, religious affiliation, or age of the burial site. The enclosed form indicates that the site has been catalogued under Wis. Stat. §157.70(2)(a) with the Register of Deeds. This process ensures that any future owners of the property will be aware of the human burial site so that they won't accidentally disturb it. Please keep the copy of the Notice of Location for your records. We are also enclosing a map of the catalogued site boundaries for your reference.

Please understand, even though the burial site on your property is catalogued, the state has not taken ownership of your land and no one has permission to access your property without first obtaining your approval. However, we remind you that the Burial Sites Preservation law prohibits catalogued burial sites from being disturbed without first obtaining a permit from the Director of the Wisconsin Historical Society. Examples of disturbance include ground-disturbing activities such as digging, installing fence posts, and removing tree stumps, as well as removal of tomb stones or other burial markers, both within the burial site and the catalogued buffer around it.

If you need to conduct ground-disturbing work within the burial site, fill out the "Request to Disturb" form at: http://wihist.org/Request-to-Disturb and submit it to the address listed on the form. For more information on burial sites in Wisconsin, please visit our Web site: wisconsinhistory.org/hp/burialsites/

If you need further assistance or have any additional questions, please contact Merisa Stacy by telephone at 1-608-261-1002 or, via e-mail, at merisa.stacy@wisconsinhistory.org. Thank you for your attention to this matter.

Sincerely,

Merisa Stacy
Burial Site Recording Assistant

Enclosed– Notice of Locations (1), map, Wis. Stats. §157.70

NOTICE OF LOCATION OF CATALOGUED BURIAL SITE

9142337
Tx:8851440

KRISTI CHLEBOWSKI
DANE COUNTY
REGISTER OF DEEDS

DOCUMENT #
5324200
05/09/2017 1:59 PM
Trans. Fee:
Exempt #:
Rec. Fee: 30.00
Pages: 1

DOCUMENT #	BWHS-17-02-060
STATE SITE #/BURIAL #	DA-0259/BDA-0264
SITE NAME	Vieth Bear Mound (Sauterhoff Mound Group)
OWNERS NAME	City of Madison Parks Meadow Ridge Parks
OWNERS ADDRESS	City of Madison Parks Division City-County Building, Room 104 210 Martin Luther King Jr. Blvd Madison, WI 53703

RETURN TO:
Merisa J. Stacy
Burial Sites Preservation
Wisconsin Historical Society
816 State Street
Madison, Wisconsin 53706-1482

Parcel Identification Numbers
251/0809-274-0218-3

WHEREAS, the legislature intends by 1985 Wisconsin Act 316 to assure that all human Burials be accorded equal treatment and respect for human dignity without reference to ethnic origins, cultural backgrounds or religious affiliations; and WHEREAS, *Wis. Stats.* § 157.70(2)(a) provides that the Director of the Wisconsin Historical Society shall identify and record in a catalog, burial sites in this state, together with sufficient contiguous land necessary to protect the burial site from disturbance; and WHEREAS, § 7011(13), *Wis. Stats* provides a property tax exemption for land containing a burial site, which is entered in the state catalog of burial sites and that this makes the property tax treatment of burial sites consistent with the property tax treatment of cemeteries; and WHEREAS, § 157.70(5)(b), *Wis. Stats.* provides that no person may intentionally cause or permit the disturbance of a cataloged burial site without a permit from the Director of the Wisconsin Historical Society. Now therefore be it known that the following described lands contain a cataloged burial site and are subject to the protection and provisions of 1985 Wisconsin Act 316.

Vieth Bear Mound BDA-0264

The Native American burial mounds are located in the NE ¼ of the NW ¼ of Section 27, Town 8 North, Range 9 East, Town of West Port, Dane County, Wisconsin.

This site is located in the northern portion of Meadow Ridge Park, south of Sauterhoff Drive and west of Meadow Valley Road. The mound lies within a box bounded by the following sides:

1. The north side of the box is parallel to Sauterhoff Drive and 150 feet south of the south edge of the pavement.
2. The south side of the box is parallel to Sauterhoff Drive and 350 feet south of the south edge of the pavement.
3. The east side of the box is parallel to the east Section line and 350 feet west of the east Section Line.
4. The west side of the box is parallel to the east Section line and 500 feet west of the east Section Line.

THIS INSTRUMENT DRAFTED BY
Merisa Stacy
Merisa J. Stacy

dated this 27th day of April 2017
Signature of Daina J Penkiunas
Daina J Penkiunas
Daina J. Penkiunas
Deputy State Historic Preservation Officer
Wisconsin Historical Society

CHIP HARRY L. BROWN III NOTARY PUBLIC STATE OF WISCONSIN

ACKNOWLEDGMENT STATE OF WISCONSIN, DANE COUNTY
Personally came before me this 27 day of April 2017
to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.
Signature of
Chip Harry L. Brown, III
My Commission is permanent.

(1)


7
Catalogued
Area

Appendix C. Photos of Current Conditions

Meadow Ridge Conservation Park – Veith Bear Mound
10/17/2019

Figure 1. NE end of mound looking NW. Note location of gravel trail at base of mound.

Figure 2. View of mound looking SW.

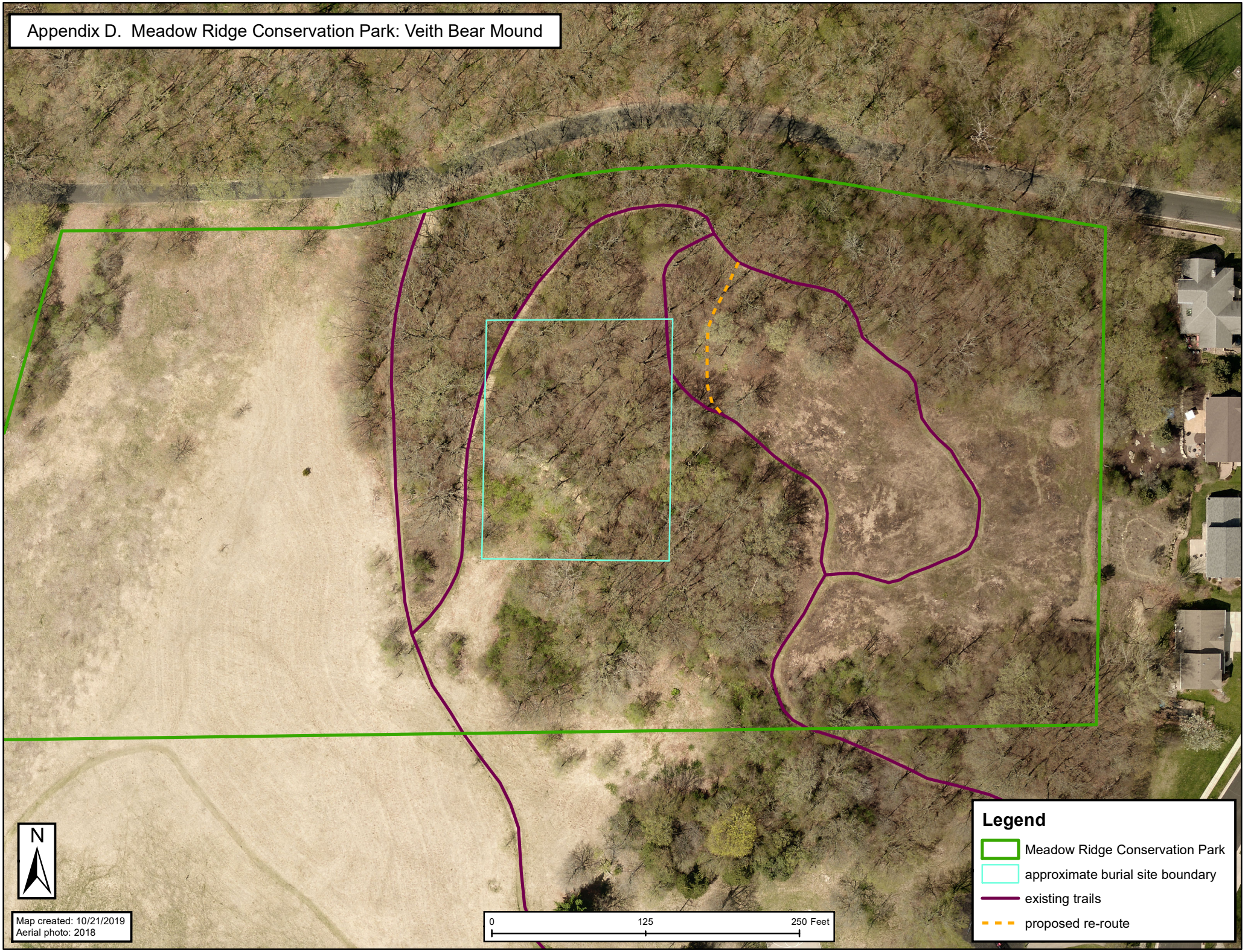
Figure 3. View of mound looking SE. Rear leg is in foreground.

Figure 4. View looking NE. Front leg is in mid-ground behind small cherry tree. Head is to right of frame.

Figure 5. View of head looking ENE.

Figure 6. Canopy over mound.

Figure 7. Canopy over mound.


Appendix D. Meadow Ridge Conservation Park: Veith Bear Mound
N
Map created: 10/21/2019
Aerial photo: 2018
0
125
250 Feet
Legend
Meadow Ridge Conservation Park
approximate burial site boundary
existing trails
proposed re-route

Appendix E.

ATTENTION HIKERS

TRAIL TO BE CLOSED TO PROTECT RESOURCES

Starting this month, this trail will be permanently closed in order to protect burial mounds located within the park. The gravel surface will be removed from some portions of the trail, while other portions will be allowed to revegetate naturally.

Wisconsin's Burial Sites Preservation Law (Wis. Stats. 157.70) protects mounds from disturbance, and Madison Parks has consulted with the Ho-Chunk Nation to develop a Burial Mound Protection Plan. The plan identifies management actions that will mitigate threats and negative impacts to mounds located in City of Madison parks. Closing this trail is necessary to prevent further impacts to the mounds here.

conserve
MADISON
PARKS

Animals- Birds

Source: eBird Field Checklist generated by eBird on 6/4/2019. (GBIF.org 2019)

State listings:
END = endangered
THR = threatened
SC/M = special concern, but fully protected by federal and state laws under the Migratory Bird Act

SGCN = Species of Greatest Conservation Need, as identified in the Wisconsin Wildlife Action Plan
SINS-Monitoring = Species has numerical conservation status ranks and sufficient information to be assessed, but does not meet SGCN criteria.
SINS-Ranking = Species for which there is basic information, but not enough to assign a numerical rank

See Wisconsin natural heritage working list website for more information:
https://dnr.wi.gov/topic/NHI/WList.html

COMMON NAME	SCIENTIFIC NAME	state listing	Wi DNR Wisconsin Wildlife Action Plan
American Crow	Corvus brachyrhynchos		
American Goldfinch	Spinus tristis		
American Redstart	Setophaga ruticilla		
American Robin	Turdus migratorius		
American Tree Sparrow	Spizelloides arborea		
Baltimore Oriole	Icterus galbula		
Barn Swallow	Hirundo rustica		
Belted Kingfisher	Megaceryle alcyon		
Black-capped Chickadee	Poecile atricapillus		
Blue Jay	Cyanocitta cristata		
Brown Creeper	Certhia americana		
Brown Thrasher	Toxostoma rufum		SINS-Monitoring
Brown-headed Cowbird	Molothrus ater		
Canada Goose	Branta canadensis		
Cedar Waxwing	Bombycilla cedrorum		
Chimney Swift	Chaetura pelagica		
Chipping Sparrow	Spizella passerina		
Common Goldeneye	Bucephala clangula	SC/M	SGCN
Common Grackle	Quiscalus quiscula		
Common Starling	Sturnus vulgaris		
Common Yellowthroat	Geothlypis trichas		
Cooper's Hawk	Accipiter cooperi		
Dark-eyed Junco	Junco hyemalis		
Downy Woodpecker	Dryobates pubescens		
Eastern Bluebird	Sialia sialis		
Eastern Towhee	Pipilo erythrophthalmus		

COMMON NAME	SCIENTIFIC NAME	state listing	Wi DNR Wisconsin Wildlife Action Plan
Field Sparrow	Spizella pusilla		SINS-Monitoring
Golden-winged Warbler	Vermivora chrysoptera	SC/M	SGCN
Gray Catbird	Dumetella carolinensis		
Great Blue Heron	Ardea herodias		
Great Crested Flycatcher	Myiarchus crinitus		
Great Horned Owl	Bubo virginianus		
Green Heron	Butorides virescens		
Herring Gull	Larus argentatus		
House Finch	Haemorhous mexicanus		
House Sparrow	Passer domesticus		
House Wren	Troglodytes aedon		
Indigo Bunting	Passerina cyanea		
Killdeer	Charadrius vociferus		
Mallard	Anas platyrhynchos		
Mourning Dove	Zenaida macroura		
Northern Cardinal	Cardinalis cardinalis		
Northern Flicker	Colaptes auratus		
Northern Rough-winged Swallow	Stelgidopteryx serripennis		
Red-bellied Woodpecker	Melanerpes carolinus		
Red-breasted Nuthatch	Sitta canadensis		
Red-eyed Vireo	Vireo olivaceus		
Red-tailed Hawk	Buteo jamaicensis		
Red-winged Blackbird	Agelaius phoeniceus		
Ring-billed Gull	Larus delawarensis		
Rock Pigeon	Columba livia		
Ruby-throated Hummingbird	Archilochus colubris		
Sandhill Crane	Grus canadensis		
Sedge Wren	Cistothorus platensis		
Snow Goose	Chen caerulescens		
Song Sparrow	Melospiza melodia		
Tree Swallow	Tachycineta bicolor		
Tufted Titmouse	Baeolophus bicolor		
Tundra Swan	Cygnus columbianus		
Turkey Vulture	Cathartes aura		
Warbling Vireo	Vireo gilvus		
White-breasted Nuthatch	Sitta carolinensis		
Yellow Warbler	Setophaga petechia		
total species	**63**	**2**	**4**

Appendix C. Species Lists

Vascular Plants

Nomenclature consistent with Wisconsin State Herbarium, UW-Madison

SCIENTIFIC NAME	COMMON NAME	Native	Introduced
Acer negundo	Box elder	X	
Acer saccharum	Sugar maple	X	
Agastache sp.	Giant hyssop	X	
Alliaria officinalis	Garlic mustard		X
Andropogon gerardi	Big bluestem grass	X	
Anemone cylindrica	Thimbleweed	X	
Aralia racemosa	American spikenard	X	
Arnoglossum atriplicifolium	Pale Indian plantain	X	
Asclepias syriaca	Common milkweed	X	
Asparagus officinalis	Asparagus		X
Carex pensylvanica	Pennsylvania sedge	X	
Carya ovata	Shagbark hickory	X	
Celastrus orbiculatus	Oriental bittersweet		X
Celtis occidentalis	Hackberry	X	
Circaea quadrisulcata canadensis	Enchanter's nightshade	X	
Cirsium discolor	Pasture thistle	X	
Coreopsis tripteris	Tall coreopsis	X	
Daucus carota	Queen Anne's lace		X
Dicentra cucullaria	Dutchman's breeches	X	
Eupatorium rugosum	White snakeroot	X	
Geum canadense	Wood avens, White avens	X	
Hackelia virginiana	Stickseed	X	
Juglans nigra	Black walnut	X	
Lonicera tatarica	Tartarian honeysuckle		X
Monarda fistulosa	Wild bergamot	X	
Morus alba	White mulberry		X
Oxalis stricta	Yellow wood sorrel	X	
Panicum virgatum	Switch grass	X	
Populus deltoides	Cottonwood	X	
Prnnus serotina	Wild black cherry	X	
Quercus alba	White oak	X	
Quercus rubra	Red oak	X	
Rosa multiflora	Multiflora rose		X
Rubus allegheniensis	Common blackberry	X	
Rubus occidentalis	Black raspberry	X	
Rudbeckia hirta	Black-eyed susan	X	
Rudbeckia triloba	Brown-eyed susan	X	
Securigera varia	Crown vetch		X
Solidago canadensis	Canada goldenrod	X	
Solidago uliginosa	Elm-leaved goldenrod	X	
Sorghastrum nutans	Indian grass	X	

SCIENTIFIC NAME	COMMON NAME	Native	Introduced
Tilia americana	Basswood	X	
Torillis japonica	Japanese hedge-parsley		X
Trifolium pratense	Red clover		X
Ulmus americana	American elm	X	
Ulmus pumila	Siberian elm		X
Ulmus ruba	Slippery elm	X	
total species	**47**		
total native	**36**		
total exotic	**11**		

Appendix D. Conservation Parks Monitoring Program

Madison Parks

3/15/2019

DRAFT

Monitoring is necessary to track the success of restoration efforts as well as the overall quality of "the resource" – the biotic and abiotic composition of the natural areas in the conservation park system. The following outlines the current monitoring program for Madison's conservation parks. This is a working document that will be updated as the program grows.

Taxa: Plants

Objectives:

1. Complete and update overall species inventory per park, and preferably per management unit.

   Tasks:

   a. Conduct meander surveys through different management units
2. Determine and track FQI in restoration areas

   Tasks:

   a. Establish transects of permanent 1m^2 plots
   b. Sample plots to record percent cover of each species present.
3. Measure and track herbivory pressure

   Tasks:

   a. Photo monitor conditions inside/outside exclosures
   b. Plant palatable species inside/outside exclosures and track abundance and height

Taxa: Insects

Objectives:

1. Complete overall species inventory per park

   Tasks:

   a. Conduct surveys with sweep nets, light traps and ground sampling?
2. Monitor pollinator abundance and species composition

   Tasks:

   a. Collect data using Wisconsin Bumble Bee Brigade protocols
   b. Collect data using Pollard transects to target butterflies

Taxa: Herptiles

Objectives:

1. Complete overall species inventory per park

   Tasks:

   b. Conduct surveys with pitfall traps?

2. Conduct breeding survey

   Tasks:

   a. Establish Wisconsin Frog and Toad Survey phenology survey locations in parks

Taxa: Birds

Objectives:

1. Analyze data available from eBird

   Tasks:

   a. Download data sets for each park

   b. Identify likely breeding species from observation dates

   c. Compare species richness for breeding and non-breeding birds across decades

2. Conduct breeding survey

   Tasks:

   a. Develop clearer goals and objectives for this based on gaps in forthcoming Wisconsin Breeding Bird Atlas II before proceeding

"Taxa": Overall vegetative structure

Objectives:

1. Establish photo points in all parks.
2. Map plant community boundaries