

Blue Mound State Park

Master Plan Management Alternatives



Master plan management options for public review.



November 2019

Contents

Overview	2
Management Alternatives and Descriptions by Topic.....	4
Project Boundary Alternatives.....	4
Camping.....	8
Cross-Country Skiing.....	11
Mountain Biking	13
Snowmobiling	17
Additional Recreation Management Topics	27
Natural Resources Management Alternatives for Blue Mound State Park	29
Forest Zone	31
Oak Transition and Prairie Zone	37
Camping and Day Use Zone	45
References.....	46

List of Abbreviations & Acronyms

DNR	Wisconsin Department of Natural Resources (also referred to as “the department”)
BMSP	Blue Mound State Park
MPCA	Minnesota Pollution Control Agency
USFS	United States Forest Service
NRB	Wisconsin Natural Resources Board
PILT	Payment in Lieu of Taxes
EIS	Environment Impact Statement
BWCWA	Boundary Water Canoe Wilderness Area
dBa	Decibels
Wis. Stats.	Wisconsin State Statutes
NR 44	Wisconsin Administrative Code Chapter NR 44



Overview

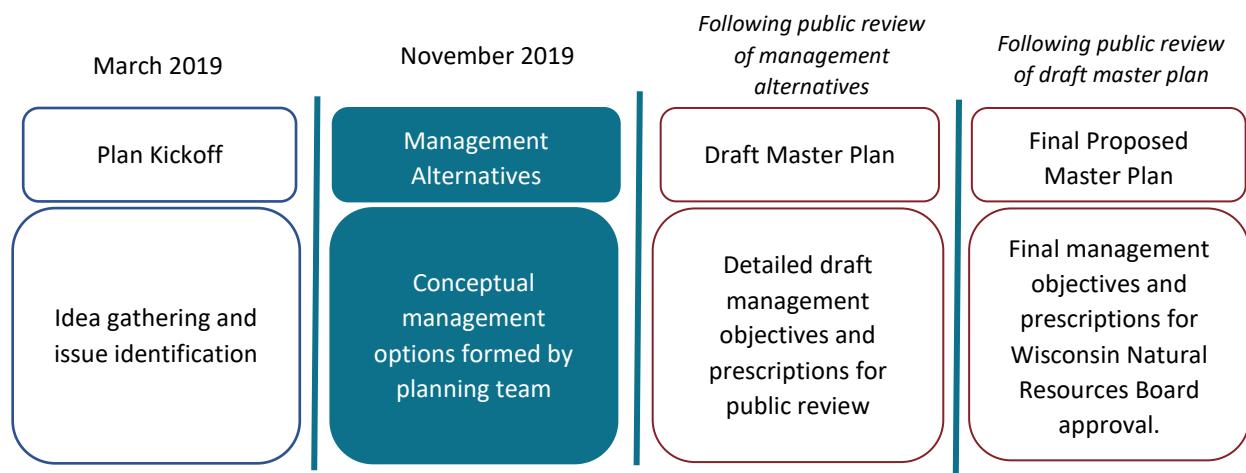
This document describes the management alternatives the Wisconsin Department of Natural Resources (DNR) Blue Mound State Park (BMSP) planning team is considering and the opportunities, impacts and challenges associated with each of them. The document is being released as part of a public input opportunity initiated by DNR. The input received on the alternatives will be used to help form the park management that is eventually proposed in the Blue Mound State Park Draft Master Plan. The alternatives presented in this document may be included in the eventual draft master plan, or they may be altered based on public input, staff expertise or other considerations made by the planning team.

Management alternatives are options or concepts the DNR planning team is considering for inclusion in the draft master plan. Input received during the initial public involvement process in Spring 2019 helped shape the management alternatives. The input the department received is summarized in the plan's [Initial Public Involvement Summary](#). Other information sources used to create management alternatives include:

- Current resource conditions and recreation opportunities at the park
- Background information (much of which is summarized in the [BMSP Master Plan Scoping Document](#))
- DNR staff expertise

Figure 1 shows how these alternatives fit into the overall planning process.

Figure 1. Public Review and Approval Steps in the Blue Mound State Park Master Planning Process



About the Management Alternatives in this Document

The management alternatives in this document are presented by topic. Each topic (e.g. camping) has between one and three management alternatives. Table 1 summarizes the management topics and their associated alternatives. Status quo alternatives represent the current conditions at the park. The alternatives listed in Table 1 are detailed later in this document.

For each topic, the alternatives are described, and a discussion of potential opportunities, impacts and challenges is offered for the public's consideration. The management alternatives are distinct for each topic and not tied to other topics. For example, selection of Mountain Biking Alternative 1 does not mean Cross-Country Skiing Alternative 1 is automatically also chosen.

These alternatives are conceptual in nature and may not represent the exact management that is eventually included in the draft master plan. The DNR planning team may alter the management proposed in the draft master plan from that described in this document.



Table 1. Management Topics and their Associated Management Alternatives

Topic	Alternatives
Real Estate Management	
Project Boundary	Alternative 1: Project Boundary Expansion Alternative 2: Status Quo
Recreation Management	
Camping	Alternative 1: Camping Expansion Alternative 2: Status Quo
Mountain Biking	Alternative 1: Trail Network Redesign Alternative 2: Status Quo
Snowmobiling	Alternative 1: Mounds Park – Ryan Road Connector Trail Alternative 2: Service Road Trail Alternative 3: West and North Slope Trail Alternative 3: Status Quo
Cross-Country Skiing Hiking Hunting and Trapping Observation Towers Road Bicycling Sledding Snowshoeing Swimming	No Change - Status Quo Alternatives Only
Natural Resources Management*	
Forest Zone	Alternative 1: Large Hardwoods Management Alternative 2: Large Hardwoods with Oak Component Management
Oak Transition and Prairie Management Zone	Alternative 1: Oak Transition and Prairie Management
Day Use and Camping Zone	Alternative 1: Aesthetics and Hazard Mitigation Management

*The natural resources management alternatives are split between three conceptual management zones. This is for the purpose of discussing management alternatives; they will be developed into more detailed management areas and assigned land management classifications during the draft plan. In the Oak Transition and Prairie and Day Use and Camping natural resources management zones, only one alternative is currently being considered by the planning team.

How to Comment on These Alternatives

The public may comment on the management alternatives presented online by visiting the [Blue Mound State Park Master Plan website](#) (dnr.wi.gov, keyword: property planning), at the management alternatives public meeting, or by contacting Phil Rynish, DNR Property Planner at:

Phil Rynish, Wisconsin DNR
 P.O. Box 7921
 Madison, WI 53707-921
 608-266-5854
Phillip.Rynish@wisconsin.gov



Management Alternatives and Descriptions by Topic

This section details the BMSP management alternatives by topic. Potential opportunities, impacts and challenges associated with the alternatives for each topic are also discussed. DNR has developed a description of general impacts associated with outdoor recreation that applicable to all alternatives in this document. This document, [Impacts Associated with Outdoor Recreation](#), is available online under Common Elements on the DNR Property Planning website (dnr.wi.gov, keyword: Property Planning).

PROJECT BOUNDARY ALTERNATIVES

A DNR project boundary is a preferred area established by the Wisconsin Natural Resources Board (NRB) where DNR may acquire land from willing sellers for a project. The master planning process is an opportunity to review the current project boundary for BMSP and identify any changes needed based on changes to the landscape and resource and recreations needs. The project boundary differs from the park boundary. Lands within the park boundary are currently owned by DNR and managed as part of Blue Mound State Park. Areas outside the park boundary but within the project boundary are not DNR owned or managed. DNR may explore the option to purchase these lands in fee title or through easements from willing sellers only.

Currently, BMSP has 1,153 acres within the park boundary. An additional 172 acres are within the project boundary but not owned by DNR. Additional information on DNR Real Estate Management can be found in the [Real Estate Management Planning Common Element](#).

Two project boundary alternatives have been developed.

Alternative 1: Project Boundary Expansion

The potential project boundary changes in this alternative, as shown on Map 1, can be discussed in three portions:

- Project boundary contractions south and east of the park
- Project boundary expansion west and north of the park in Iowa County
- Project boundary expansion north and east of the park in Dane County

In total, 1,405 acres would be added to the BMSP project boundary. Under this alternative, the project boundary would contract by 74 acres bringing the net project boundary gain to 1,331 acres.

Project Boundary Contractions

As shown on Map 1, areas south of the Military Ridge State Trail and on the eastern edge of the park may be removed from the project boundary under this alternative. These areas, 74 acres in total, are now developed and are not likely to be prioritized for acquisition should they be offered for sale.

Iowa County Expansion

As Map 1 illustrates, under this alternative, the project boundary would expand 921 acres in Iowa County to encompass much of the forest block west and north of the park that continues into BMSP.

Dane County Expansion

The Dane County portion of this expansion is distinct from the Iowa County portion. Dane County has established a natural resource area (NRA) in the Blue Mounds area, which includes Brigham County Park and Blue Mounds County Wildlife Area. Additional lands in Dane County's Blue Mounds NRA that are near BMSP are included in this expansion alternative. Additional lands that are of shared interest to both Dane County and DNR for recreation management, but outside the Blue Mounds NRA, are also included in this project boundary expansion alternative. In total, 484 acres in Dane County would be included in the project boundary expansion.



The Dane County portion of this expansion would be an area of mutual acquisition between DNR and Dane County. Both agencies have shared resource and recreation management goals in this area and may work together to acquire target parcels from willing sellers.

Alternative 2: Status Quo

Under the status quo alternative for the project boundary, DNR would not acquire additional land beyond what is currently included in the project boundary. The project boundary may contract to remove areas south and east of the park as in Alternative 1.

Considerations for the Project Boundary Alternatives

Potential Opportunities

Alternative 1 would authorize the department to acquire additional property or easements from willing sellers for resource and recreation management beyond what is currently authorized. From a recreation standpoint, the Alternative 1 expansion may allow for additional recreational facilities, such as hiking, mountain biking and cross-country skiing trails to be developed where feasible. Project boundary expansion would allow many areas within the viewshed of the BMSP observation towers to be protected from development. Areas of nearly unbroken forest, much of which is high-quality Southern Mesic Forest, are included in the expansion area of Alternative 1. These areas are part of the large forest block that are important for forest interior birds and help create an ecological corridor that continues through BMSP to Brigham County Park and beyond. Additionally, Snowmobile Alternative 2, if selected, is partially dependent on the selection of an alternative that includes a project boundary expansion.

The portion of the project boundary expansion in Dane County represents a shared goal with Dane County to meet both DNR and Dane County resource and recreation management goals. The Dane County portion of the expansion to the north of the park would be part of a larger complex of prairie conservation already initiated by Dane County and The Prairie Enthusiasts, a non-profit organization. The portion of the expansion to the east of BMSP would largely be for recreational purposes, serving as an area where both entities could work jointly to acquire land or easements to establish new recreational opportunities, including a bicycle trail loop from the Military Ridge State Trail and a potential off-leash dog area.

Acquisition of lands or access easements in the expanded areas would not only allow for resource management, in new areas, but also lands currently within BMSP. Several areas of this project boundary expansion would, if acquired, give convenient access to the north and west slopes of Blue Mound. Equipment access to these areas from the existing park for resource management is difficult and could require closure of certain trails for several days to weeks.

Under the Status Quo Alternative the current project boundary would be maintained. Maintaining the existing project boundary would not use fiscal resources for land or easement purchases, potentially creating opportunities for land acquisition at other DNR properties.

Potential Environmental and Socioeconomic Impacts

Impacts associated with the project boundary expansion are expected to be positive. While the region surrounding BMSP has a relatively high number of state parks compared to other areas of the state, it has less public conservation land in general. The project boundary expansion areas in Alternative 1, if acquired, would offer new opportunities for public recreation and resource management. This is anticipated to be a positive social impact and may have a positive economic impact on surrounding areas as additional visitors are drawn to opportunities at BMSP.

Environmental impacts associated with recreation facility development would be similar to recreation facility development in other areas of BMSP. Other environmental impacts would largely be positive as areas acquired by the department would not be developed and would be managed for recreation and ecological value. Acquired lands



would serve as a buffer between park users and development and would maintain more of the viewshed from the observation towers and lookouts at the park, having a positive impact.

Under Alternative 1, the project boundary would also contract south of the Military Ridge State Trail and on the eastern side of the park. These areas are mostly residential developments and are unlikely to be acquired by the department. While the department would no longer be authorized to acquire these areas, impacts are anticipated to be minimal.

Challenges

Fiscal and social challenges may occur with the alternatives including project boundary expansions. Project boundary expansions can, at times, lead to concerns regarding a perceived loss of tax revenue in the municipality in which the department acquires land. However, the department makes an annual payment in lieu of taxes (PILT) under ss. 70.113 and 70.114, Wis. Stats., to the appropriate municipality for all property it owns in fee title. More detailed information on how the department pays PILT may be found at dnr.wi.gov by searching for the keyword "PILT."

Fiscally, acquiring the land in this expansion could prove challenging. However, the project boundary shows areas the department may obtain, not those it will obtain. If fiscal resources and approvals to acquire lands are not available when land owners are willing to sell, the lands would not be acquired.

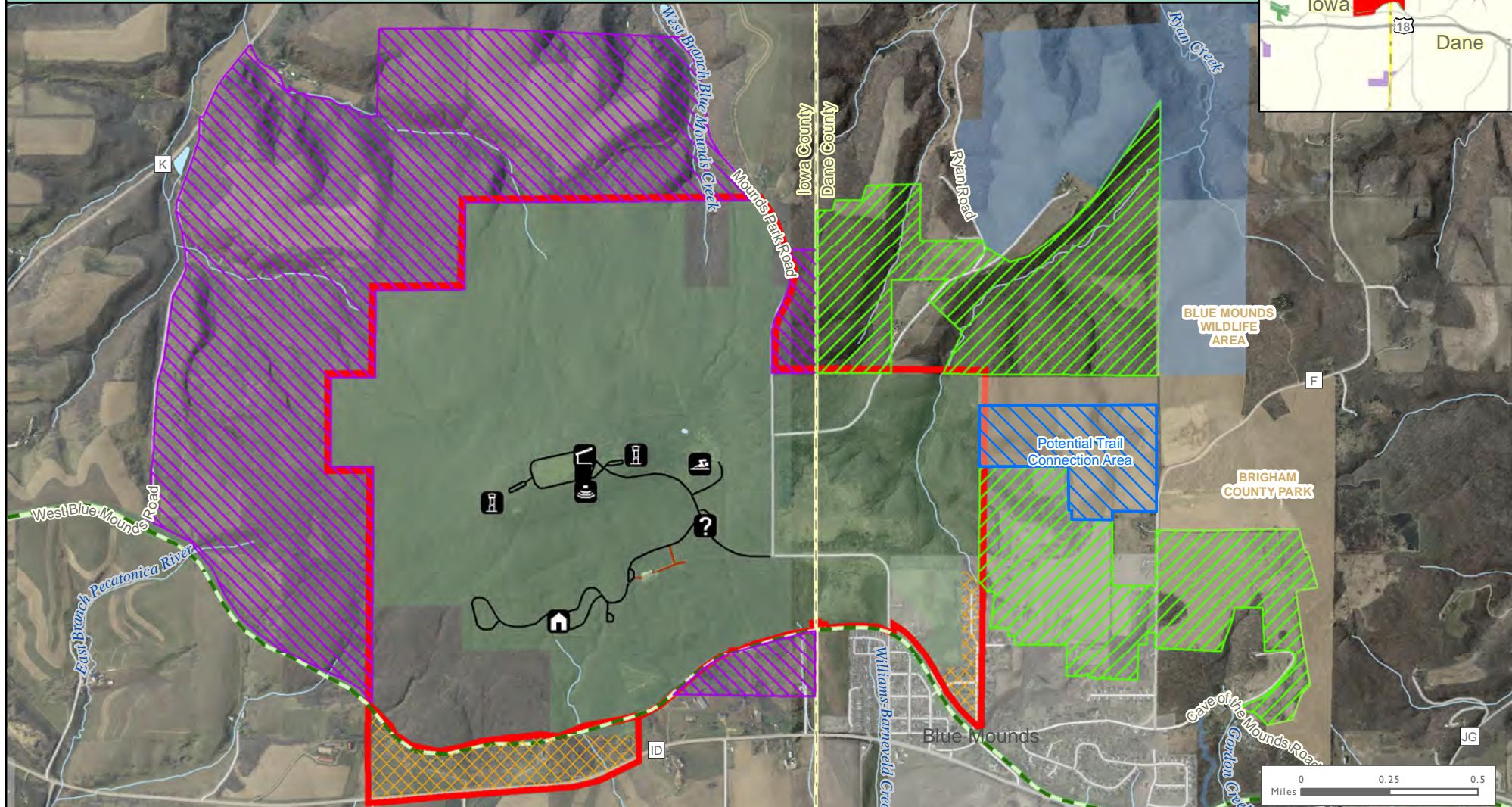
Under the status quo alternative, DNR would be authorized to acquire up to 172 additional acres that are within the current project boundary but not DNR owned. Approximately 48 of those 172 acres are residential or other development and may be less suitable for inclusion in BMSP's project boundary than other areas included in the project boundary expansion alternatives. The population of the BMSP region is growing and the park would likely continue to experience an increase in its user base (WDNR, 2018). The status quo alternative may create challenges for the park and its facilities to continue to offer high-quality experiences as overcrowding may become an issue.



BLUE MOUND STATE PARK

POTENTIAL PROJECT BOUNDARY EXPANSION

DRAFT



Project Boundary
Blue Mound State Park

Project Boundary
Expansion - Dane County
Project Boundary
Expansion - Iowa County
Project Boundary
Contraction

Conservation Land
Dane County Parks
DNR Fee Title

Military Ridge State Trail
DNR Road Open to Motorized Access
DNR Road Closed to Motorized Access

Tower
Entrance Station
Friends Shelter

Mayberry Cabin
Nature Center
Amphitheatre
Pool Concession

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Bureau of Facilities and Lands
Nov 01, 2019
BMSP-9070-I
kg

MAP - I

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

CAMPING

Camping is a popular activity at BMSP. Currently, camping occurs in two campgrounds, the Family Campground (78 sites) and the Bike/Hike Campground (12 sites). The accessible Mayberry Cabin is also available for people with disabilities. The DNR planning team has formed two camping management alternatives for the public's consideration.

Camping Alternative 1: Expanded Family Camping and Group Camp Addition

As shown on Map 2, additional camping opportunity would be planned in three areas:

1. A new campground loop would be authorized to be added to the Family Campground. This new loop would include up to 50 sites. The family campground loop would be north of the current Family Campground and would be auto-accessible. The new loop would have access to the current shower facility and may include electrical receptacles (hook-ups) at a portion of the campsites.
2. A new group camp area would be added east of the current Family Campground.
3. Up to ten additional sites would be authorized in the Bike/Hike Campground. These sites would be similar to the current sites in the Bike/Hike Campground. The campground would remain rustic.

Camping Alternative 2: Status Quo

If the Status Quo Camping Alternative is selected, the draft master plan would maintain the current camping facilities and would not expand camping beyond current levels.

Considerations for Camping Management Alternatives

Potential Opportunities

The current camping experience at BMSP is popular, with both the Family and the Bike/Hike campgrounds often near or at capacity during summer months. Expanding camping opportunities in the Family Campground, the Bike/Hike Campground and adding a group camp were ideas submitted during the initial public comment period. Alternative 1 would both add opportunity to existing recreational experiences at BMSP as well as provide a new experience by adding group camping. Based on the location of the potential additional family camping loop and staff recommendations, the expanded area would likely be better suited to pull-behind campers and RVs, which can be difficult to maneuver into existing campsites.

The existing Bike/Hike Campground is also popular. DNR staff expect this campground to continue to grow in popularity. Expanded camping at the Bike/Hike Campground under Alternative 1 would allow park staff to construct additional sites as visitor need demand increases.

BMSP cannot currently accommodate large groups (more than six people) that wish to camp together on a single site. The addition of an outdoor group camp facility would add a new camping experience to BMSP and allow the park to host these larger groups.

Selection of the status quo alternative would preserve the current, demonstrably popular, experience.

Potential Environmental and Socioeconomic Impacts

Under Alternative 1, the expansion of camping at BMSP would occur in areas that have been previously developed or near these areas. Thus, the developed facilities footprint at BMSP is not expected to greatly expand. New facilities are anticipated to draw more users which can have negative environmental impacts. These impacts would be similar to those that currently occur at the park but may be larger in magnitude due to additional visitors.



Alternative 1 is likely to receive public support and have positive fiscal impacts as it expands a fee-generating recreational opportunity and may increase economic benefits to the local community. Up front fiscal impacts may make full implementation of this alternative difficult.

Potential Challenges

While Alternative 1 would likely have long-term positive fiscal impacts, full implementation may present upfront funding challenges. However, the camping experience may be expanded commensurate with demand, thereby matching up front costs with what can realistically be recouped through user fees. While Alternative 1 is expected to be generally popular with the public, many campers seek quiet and solitude. Expanded camping may cause concern that the camping experience would become less desirable for those seeking a more peaceful experience.

As the population of the region surrounding BMSP continues to grow, demand for camping experiences in the region is also likely to grow. The Status Quo Alternative would not allow BMSP to meet the larger demand and would create challenges for those who wish to camp in the region.

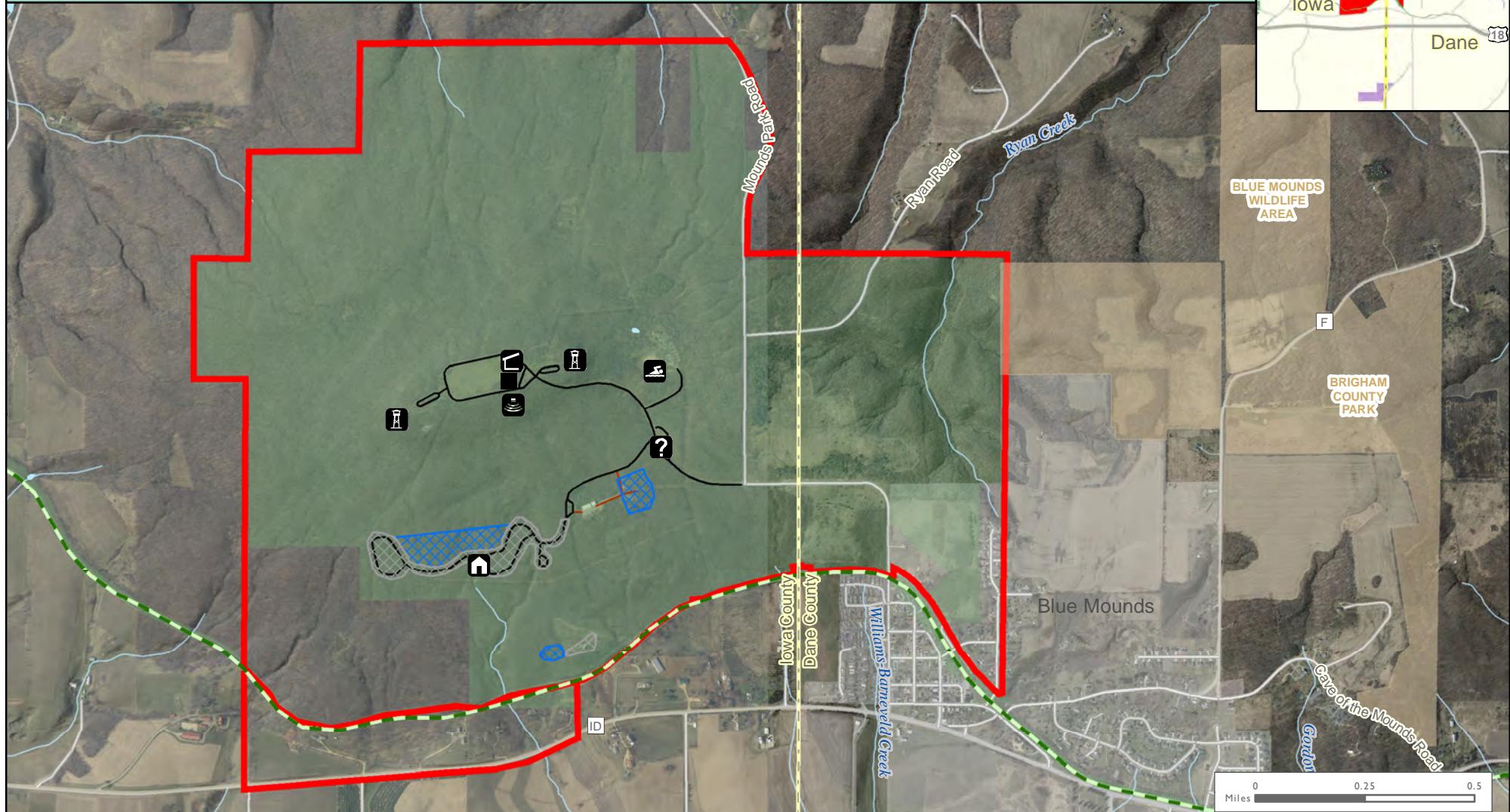


Image 1. Family camping at sites like the one shown here would be expanded under Alternative 1.



BLUE MOUND STATE PARK CAMPING

DRAFT



Project Boundary

Blue Mound
State Park

Existing Campground

Alternative I: Campground Expansion Areas

Dane County Parks

DNR Fee Title

Military Ridge
State Trail

DNR Road Open
to Motorized Access

DNR Road Closed
to Motorized Access

Tower

Entrance Station

Friends Shelter

Mayberry Cabin

Nature Center

Amphitheatre

Pool Concession

WISCONSIN DEPARTMENT
OF NATURAL RESOURCES

Bureau of
Facilities and Lands
Sep 25, 2019
BMSP-9070-2
keg



MAP-2

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

CROSS-COUNTRY SKIING

Blue Mound State Park is a popular cross-country skiing destination. During the initial comment period, the public largely expressed satisfaction with the current cross-country skiing opportunities at BMSP. The planning team has developed two cross-country skiing alternatives, both of which largely or completely maintain the current trail system.

Alternative 1: Controlled Mounds Park Road Crossing

Under Alternative 1, cross country skiing trails would be adjusted to improve the Mounds Park Road crossing. As shown on Map 3, a new trail would be constructed utilizing a former powerline corridor to reach the Park Entrance Road. The trail would parallel the Park Entrance Road to its intersection with Mounds Park Road. Under this alternative, all Mounds Park Road crossings would happen at an intersection as a crosswalk. The exact crossing paths would be determined during implementation. Bridge or boardwalk facilities would be constructed as necessary.

The department anticipates that it would request the Mounds Park Road and Park Entrance Road intersection become an all-way stop. If Snowmobile Alternative 1 or 4 are selected, stop signs would be installed at the intersection. Under this scenario, all traffic would be required to stop and allow pedestrian trail users to cross the roads consistent with state laws.

Alternative 2: Status Quo

Under Alternative 2, the current trail system will be continued. Small changes may occur based on management alternatives selected for other recreation and sightline assessments of the northern Mounds Park Road crossing.

Considerations for Cross Country Skiing Management Alternatives

Potential Opportunities

The current cross-country ski trail system is very popular with park users. Both alternatives will maintain the majority of the ski trail system as is. Importantly, based on the feedback of staff and the public, BMSP will maintain its niche as a location that is primarily set-up for classical skiing. The current cross-country ski trail system crosses Mounds Park Road at two points, both of which are not controlled intersections. Alternative 1 presents the opportunity to improve the safety of these crossings by moving the crossings to a controlled intersection.

Potential Environmental and Socioeconomic Impacts

Environmental impacts resulting from either alternative would be minimal as each largely maintains the current ski trail network. Alternative 1 would result in minor impacts to vegetation to create the trail to the controlled Mounds Park Road crossing. The trail would be in, or near, previously disturbed areas, thus the impacts are expected to be minor. Socioeconomic impacts are similarly expected to be minor.

Potential Challenges

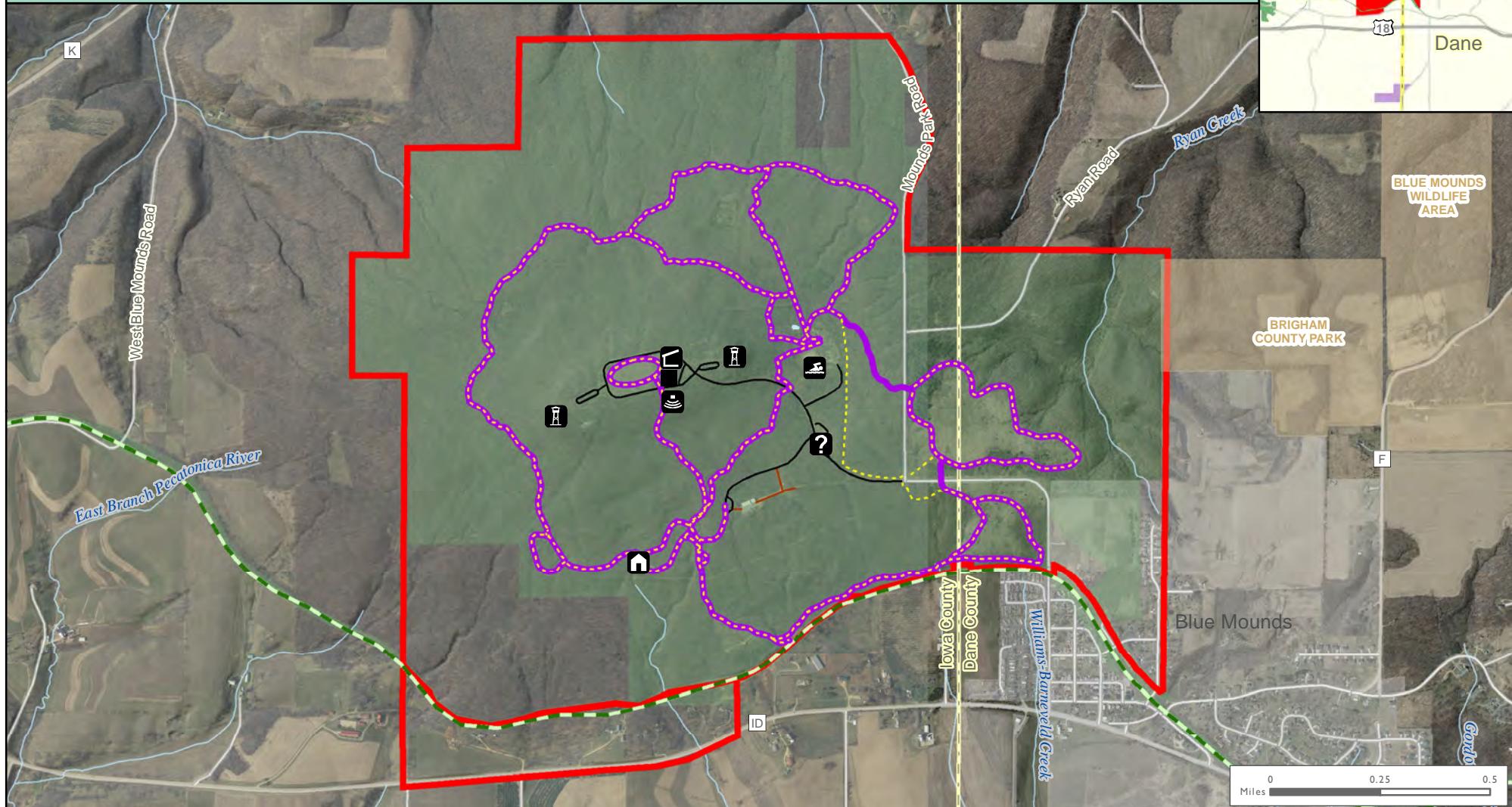
Social challenges may occur for Alternative 1. The current cross-country ski trail system is popular, and changes to it may be unpopular with some park users. Other challenges are related to cross-country skiing in general. From a national perspective, participation rates in cross-country skiing are expected to remain static (White, Bowker, Askew, Langner, & English, 2016). Assuming this applies to the BMSP region, cross-country skiing may see an increase in participants given the region's growing population. This may create overcrowding challenges. However, cross-country skiing at BMSP requires natural snow, which may decrease in the coming years as the climate changes. Nationally, when climate change is accounted for, participation rates in cross-country skiing are expected to fall 36% by 2030 (White, Bowker, Askew, Langner, & English, 2016). This trend may create maintenance challenges.



BLUE MOUND STATE PARK

CROSS COUNTRY SKI TRAILS

DRAFT



Project Boundary
Blue Mound State Park

Alternative 1: Mounds Park Road Controlled Crossing
Alternative 2: Status Quo

Military Ridge State Trail
DNR Road Open to Motorized Access
DNR Road Closed to Motorized Access

Tower
Entrance Station
Friends Shelter

Mayberry Cabin
Nature Center
Amphitheatre
Pool Concession

Dane County Parks
DNR Fee Title

WISCONSIN DEPARTMENT OF NATURAL RESOURCES



Bureau of Facilities and Lands
Nov 01, 2019
BMSP-9070-8
keg

MAP-3

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

MOUNTAIN BIKING

The planning team has developed two alternatives for mountain biking at BMSP.

Alternative 1: Trail Network Redesign

Under Alternative 1, the mountain bike trail system would be adjusted as shown in Map 4. The mountain bike trail system in Alternative 1 is meant to achieve several objectives, including:

1. A trail system that offers riding opportunities to beginner, intermediate and advanced riders.
2. A more sustainable trail system that requires less work to maintain by adopting modern trail designs that limit soil movement and allow the trails to reopen more quickly after the spring melt and precipitation events.
3. Connection to Brigham County Park. This connection would only be developed if Dane County authorizes and develops mountain bike trails at the county park.

The trail system shown on Map 4 is a conceptual design of the trails, it will likely vary slightly due to on-the-ground conditions and to ensure sensitive resources are protected. Any Ryan Creek crossings would utilize best management practices to ensure this Class II trout stream remains protected. Under Alternative 1, those current trails not included in Alternative 1 on Map 4 would be closed and rehabilitated to natural conditions.

Alternative 2: Status Quo

Alternative 2 continues the current mountain biking trail system, without change, as shown as the Status Quo Alternative on Map 4. Under this alternative, additional trails and trail modifications would not be authorized.

Considerations for Mountain Biking Management Alternatives

Potential Opportunities

Under Alternative 1, the current mountain biking experience is expanded by nearly three miles. The Alternative 1 trail network shown on Map 4 is meant to create a mountain bike experience for a full spectrum of skill levels, with certain trails suited for beginners and others for advanced riders. The current trail system at BMSP is considered technically challenging and difficult for beginner riders. By modifying the trail system to accommodate riders of differing abilities, the mountain bike experience would be expanded to more users. The current trail system is also frequently closed during spring and summer months due to wet conditions. The trail system in Alternative 1 is meant to create a more



Image 2. A 1.5-inch deep mountain bike rut caused from riding while the trail was not adequately drained. Over time ruts can degrade trail conditions and cause environmental harm such as soil

sustainable mountain bike trail system that lessens soil movement, drains water more quickly and requires less maintenance. It is anticipated that Alternative 1 would increase the total number of trail days available to mountain



bikers. Under both alternatives the opportunity exists to continue and, where needed, improve erosion control. This is especially true in the areas surrounding Ryan Creek.

The current trail system, especially the advanced skill level it requires, is popular with many mountain bikers. These riders appreciate the technical nature of the trail and are drawn to BMSP for the challenging trails. The Status Quo Alternative would preserve all trails currently at the park and maintain this popular trail system.

Potential Environmental and Socioeconomic Impacts

Under Alternative 1, trail miles would be added, requiring construction in new areas of the park. Under Alternative 1, stretches of mountain bike trail that are part of the current trail system, but not included in the network shown on Map 4, would be closed and rehabilitated. Alternative 1 may lead to an increase in trail density in some areas of BMSP and a decrease in others. This may lead to an increase and decrease in impacts from mountain bike trails depending on the area of the park.

Alternative 1 would have upfront costs associated with trail construction. However, if implementation results in increased mountain bike activity at the park, it may have positive impacts fiscally for both the park and the surrounding areas. Mountain bikers must purchase a state trails pass from the State of Wisconsin. Therefore, additional mountain bikers may create additional trail pass revenue. Complementing this, the increase in mountain bikers traveling to the area due to the park's mountain bike destination status may have positive effects on surrounding local economies.

The mountain bike trail system at BMSP is maintained by the local mountain bike club. The club relies on volunteers to complete this maintenance. The trail network in Alternative 1 is meant to broaden overall participation in mountain biking at BMSP by providing trails that are suitable for users of all abilities. In doing so, the trail system may cultivate new volunteers for trail maintenance, lowering the burden on existing volunteers and DNR staff thereby potentially lowering the fiscal burden that occurs when trails become unusable due to deferred maintenance.

The current trail system is well established, and no new trail construction is expected under Alternative 2. Alternative 2 would neither raise nor lower the overall trail density in any area of the park. Soil displacement and water retention issues that occur on the trail system now would likely continue or worsen.

This may result in a negative impact on trail usership and environmental impacts associated with degraded trails. Additionally, under Alternative 2, trails that are determined to be unsustainable due to maintenance issues may be closed.

Social and economic impacts of Alternative 2 would likely be minimal as it would continue the current state. Trail pass sales related to BMSP would likely remain at current levels. Over time, this alternative may have negative fiscal impacts as the current trail system is technically advanced and may have trouble drawing new volunteers to maintain the trails. This would lead to additional maintenance costs. Additionally, the current trail system frequently suffers soil displacement issues, which require fiscal resources to repair.

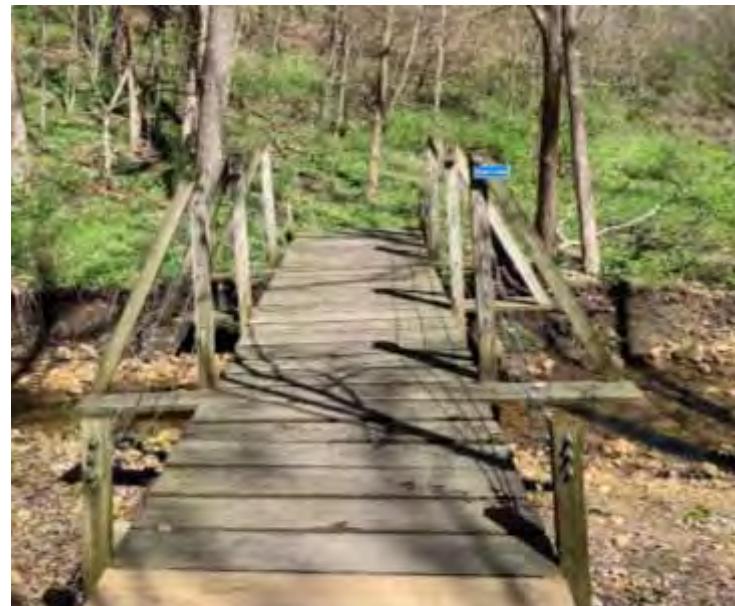


Image 3. The bridge over Ryan Creek on the Overlook Mountain Biking Trail.



Potential Challenges

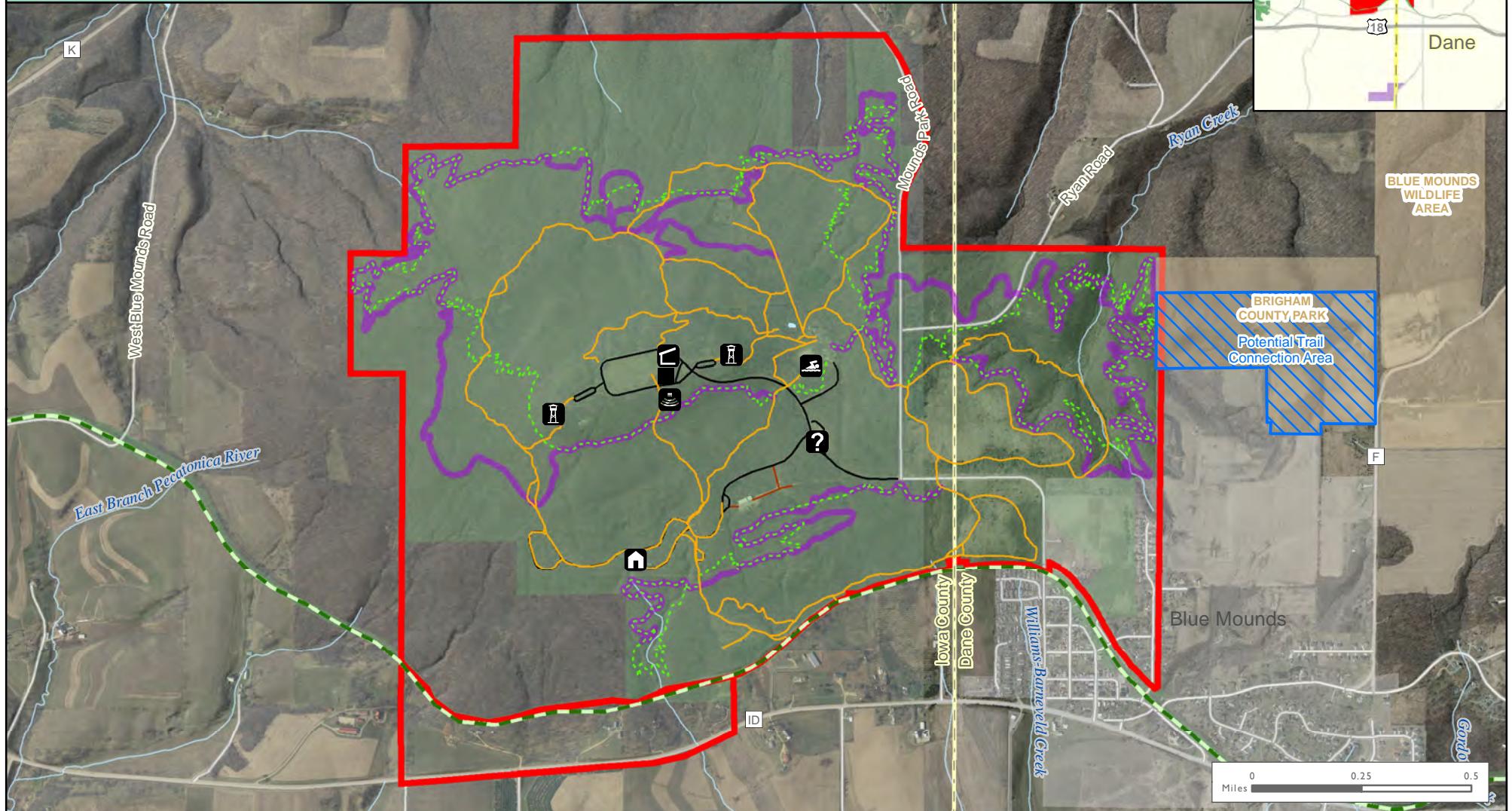
Initial trail construction of the Alternative 1 trail system may pose fiscal challenges. Construction of new trails may be phased to allow construction of top-priority trails first, with others being constructed as fiscal resources become available. Top priority may be those that alleviate current trail closure issues or create experiences for differing riding experience levels.

The current trails are generally closed for most of the spring and following summer precipitation events due to wet conditions. Trail erosion and its associated maintenance are frequent issues on the current trail system. Both issues would likely persist and continue to pose challenges under Alternative 2.



BLUE MOUND STATE PARK MOUNTAIN BIKE TRAILS

DRAFT



Project Boundary
Blue Mound State Park

Status Quo Mountain Bike Trails
Alternative I Mountain Bike Trails
Current Hiking Trail

Military Ridge State Trail
DNR Road Open to Motorized Access
DNR Road Closed to Motorized Access

Tower
Entrance Station
Friends Shelter

Mayberry Cabin
Nature Center
Amphitheatre
Pool Concession

Dane County Parks
DNR Fee Title

WISCONSIN DEPARTMENT OF NATURAL RESOURCES



Bureau of Facilities and Lands
Oct 22, 2019
BMSMP-9070-3
keg

MAP-4

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

SNOWMOBILING

Snowmobiles currently utilize the unpaved areas along Mounds Park and Ryan roads as a connection between Military Ridge State Trail and the county trail system north of the park. Snowmobiling has attracted a large amount of public interest during this and past BMSP master planning efforts. For a summary of public input on snowmobiling in BMSP during the initial public input period, please see the [Initial Public Input Summary](#) online (go to dnr.wi.gov, search keywords “property planning” and click Blue Mound State Park) The input received during the initial public involvement period was considered in creating these alternatives.

The current snowmobile route along the roads has terrain obstacles and, at times, limited clear space. Public comments have indicated this route presents an unpleasant riding experience. The alternatives providing for snowmobile use presented in this document were developed in consideration of the comments received during the public involvement period. Considerations involved in creation of these alternatives include:

- Maintaining a safe connection, outside of the right of way ditches, from Military Ridge State Trail to the existing county system trails north of the park.
- Ensuring that any snowmobile connection opportunities minimize disruption to other activities.
- Minimizing snowmobile and nonmotorized use trail crossings.

As part of management alternative development, the department evaluated ownership of the current snowmobile route on the Mounds Park and Ryan road rights of way. The department concluded that the Town of Brigham has an easement for road purposes but DNR maintains fee-title ownership of lands underlying both Mounds Park and Ryan roads. This means the department may manage the uses that occur on these lands as long as that management does not interfere with the town’s easements.

The snowmobiling alternatives presented here and on Maps 5 - 8 may be altered in the eventual draft master plan based on public input and other management options selected. These alternatives are intended to illustrate concepts DNR is considering, to give the public an opportunity to aid the department in establishing a snowmobiling proposal for the draft plan. Additional alternatives were investigated, but we found to not be feasible at this time (see page 22).

Alternative 1: Mounds Park – Ryan Road Connector Trail

A 1.4-mile snowmobile trail following the Mounds Park Road to Ryan Road corridor would be constructed under Alternative 1. The trail would be a two way trail and would generally be at least 40 feet from the paved road to comply with s. 350.02(2)(b)4.a., Wis. Stats. The trail may be constructed within 40 feet of the paved roadway if sufficient vegetation is present to serve as a headlamp barrier and the topography is suitable. The trail would be 12-feet wide.

If Alternative 1 is selected, selection of Cross-Country Skiing Alternative 1 or slight adjustments to the alignment of existing recreational opportunities, including the Pleasure Valley ski trail crossing of Mounds Park Road, may be necessary. Any modifications would be intended to enhance the safety of all park users while minimizing impact on existing recreational opportunities.

Alternative 2: Service Road Trail

Under Alternative 2, a snowmobile trail would connect the Military Ridge Trail to the club trails north of the park primarily utilizing an existing service road through the valley in the eastern portion of the park, commonly known as Pleasure Valley. The portion of the trail connecting the Military Ridge Trail to the existing service road would be constructed. Where feasible, this path would follow non-designated trails and a park service road currently closed to motorized vehicle use that currently exist on the landscape. The service road portion of the trail would need



minimal improvement to sustain a snowmobile trail. This trail would follow a path similar to the former snowmobile trail that is believed to have operated until the early 1990's.

Alternative 3: West and North Slope Trail

Alternative 3 would create a new snowmobile trail corridor, constructed west of the park, as shown on Map 7. The trail shown on Map 7, is conceptual, no trail locations have been sited. The snowmobile trail would likely be constructed almost entirely outside of the existing park boundaries and would support two-way snowmobile traffic. Under this alternative the trail would traverse the west and north slopes of Blue Mound from the Military Ridge State Trail to the county trail system north of the park.

This alternative would place a connecting trail on land that is currently privately owned; DNR does not own land where this Alternative 3 trail would be located. As part of this alternative, the BMSP Project Boundary (the area within which the state would be authorized to acquire land from willing sellers; see page 4 for more information) could be expanded to include a portion of this area. If this occurs, DNR could attempt to acquire land rights where this new connecting trail could be located.

Alternative 4: Status Quo

Under the Status Quo alternative, snowmobiling would continue to be authorized only within the portion of the Mounds Park and Ryan road rights of way that are not traveled by motor vehicles. This area is the unpaved portion of the right of way where snowmobiling currently occurs. The snowmobile route would continue to follow Mounds Park and Ryan roads to connect the Military Ridge State Trail and the club-maintained snowmobile trails on private lands north of BMSP.

Considerations for the Snowmobiling Alternatives

Potential Opportunities

All snowmobiling alternatives would connect to existing snowmobile trails outside of the park. Alternatives 1, 2 and 3 would provide a more desirable snowmobiling experience. Alternative 1 would keep snowmobiles near Mounds Park and Ryan roads where snowmobiles currently operate. The trail would be built as close to the paved portions of the roadway as feasible and practicable given physical and legal considerations. By keeping snowmobiling in an area already travelled by snowmobile and other motorized vehicles, Alternative 1 offers the opportunity to improve the snowmobiling experience while keeping conditions close to status quo.

During the initial public involvement period, nonmotorized and motorized trail crossings were a subject of concern. Alternative 2 offers the opportunity to establish a snowmobile trail connection with few intersections with nonmotorized recreation trails. See the Impacts to Existing Recreation section (page 20) for more information. Alternative 2 relies on existing infrastructure which would also result in lower construction costs and less impact to vegetation. Alternative 3 offers the opportunity to improve the snowmobiling experience while connecting Military Ridge State Trail to county trail system north of the park without utilizing areas currently within park boundaries. This creates the opportunity to establish a snowmobile trail with little to no impact on existing uses.

Connection of the Military Ridge State Trail with the county trail system north of the park through all of the alternatives maintains a component of the larger county snowmobile systems in Dane and Iowa counties. Specifically, the connection through the BMSP is a small portion of an approximately 40-mile loop of snowmobile trails that connects the communities of Blue Mounds, Black Earth, Cross Plains and Mount Horeb. Alternatives 1, 2 and 3 would maintain this connected-loop while enhancing the riding experience through and near the park. The status quo alternative would maintain the connection of the county snowmobile trail system while not creating additional impact on other recreational activities at the park. Additionally, the status quo is not anticipated to require construction and would therefore have less impact.



Potential Impacts

Impacts from snowmobile trail construction would depend on the final siting of any trail. Impacts may occur during both snowmobile trail construction and during trail use. Any impacts associated with snowmobile trail use would mainly occur during the portions of the winter season when an adequate amount of snow is present for snowmobile trails to be open. In Dane County, snowmobile trails are only open between December 1st and March 31st when the temperature is a steady 32 degrees Fahrenheit and at least six-inches of snow is on the ground (Dane County, 2017). A general description of vegetation, wildlife and soil, sound, emissions, visual, and socioeconomic impacts are included here.

Vegetation, Wildlife and Soil Impacts

Initial construction impacts under Alternatives 1 and 3 may include loss of trees or other vegetation, soil compaction, minor erosion and minor impacts to wildlife due to noise. Alternative 3 may also have slight impacts on the large forest blocks beneficial to forest interior birds. The nature of this impact would depend on siting of the trail. Maintenance of canopy coverage in the forest block areas would be considered during trail siting (see page 35 for more information). Under Alternative 1, minimal impacts on forest cover and forest interior birds are anticipated as the trail would occur along an existing forest edge. Similarly, little to no impact on forest cover is expected under Alternative 2 as it utilizes an existing service road through forested areas. Any vegetation and soil impacts resulting from construction of Alternative 2 would occur in brush or grassland areas or along the existing disturbed area on Ryan Road.

The trail in Alternative 2 is near the headwater areas Ryan Creek, a Class II trout stream, and crosses the stream using an existing culvert bridge. Erosion control techniques and all permitting required will be implemented during any trail improvement that is needed and during trail maintenance to limit impacts to this resource.

After initial trail construction, environmental impacts would be associated with trail maintenance and use under all alternatives. Trail maintenance may involve brushing and mowing activities during the growing season. This would impact the vegetation on the trail bed, but surrounding vegetation is unlikely to be impacted. During winter months, when an adequate amount of snow is present, trail grooming equipment would be used. Brushing, mowing and grooming equipment may cause minor disturbances to wildlife.

Emissions Impacts

Under all alternatives, snowmobile use would cause exhaust emissions. These emissions are expected to be similar to the emissions generated by snowmobiles currently passing through BMSP and elsewhere on the extensive snowmobile trail systems in Dane and Iowa counties. The impact these emissions would have on other park users varies based on the alternative. Park visitors would likely encounter emissions from snowmobiles in Alternatives 1 and 4 that are similar to existing conditions. Under Alternatives 1 and 4, the snowmobile trail or route would continue to be near Mounds Park and Ryan roads, which are frequently traveled by other motorized vehicles. Snowmobiles are not anticipated to significantly add to the emissions already emitted by current uses in these areas.

Alternatives 2 and 3 would introduce motorized recreation, and therefore emissions, to new areas. Mountain bike trail users may briefly encounter emissions from snowmobiles on the Alternative 2 trail where it crosses mountain bike trails. Other trail users are unlikely to directly encounter emissions under this alternative as the motorized and nonmotorized trails would be separated. Any emissions encountered would be similar to those currently encountered from snowmobiles and other existing roadway uses. Alternative 3 impact areas are not currently part of the park and therefore have no existing park uses. Park users within the current boundaries are unlikely to encounter new emissions associated with snowmobiles under Alternative 3.

Aesthetic Impacts

Impacts to the overall aesthetics of the park are likely to be low under any of the alternatives. In areas where any of the alternatives cross grasslands, no change to the aesthetics is expected. Aesthetic impacts from clearing of other vegetation would be minimized when possible. The trail in Alternative 1 would require the clearing of some trees,



which would be noticeable. However, the overall aesthetic would be minimally changed as the trail would appear to be a continuation of the roadway corridor clearing. In areas where the trail would be screened from the roadway, the snowmobile trail would not be obvious unless crossing it on a different trail. Alternative 2 would similarly have few aesthetic impacts as it relies on an existing service road to cross through forested areas. Alternative 3 would not be visible to users of the current park facilities and would no impacts on the existing aesthetic. Alternative 4 would continue the current route and not result in changes to the existing aesthetic.

Sound Impacts

Past efforts by DNR and other agencies (USFS, 2011) (WDNR, 2013) provide guidance on the parameters to consider when evaluating potential sound impacts associated with the snowmobile alternatives.

To discuss snowmobile sound impacts, three factors are described here:

1. Introduction of a new type of sound to an area
2. Additional volume of snowmobile sound in an area
3. Additional frequency or how often new sounds may be heard

When considering the volume of snowmobile sound, it is useful to note that in Wisconsin for every snowmobile manufactured on or after July 2, 1975, the noise level standard for exhaust and engine noise is 88 decibels as measured in accordance with the procedures established for the measurement of exhaust sound levels of stationary snowmobiles in the January 2004 Society of Automotive Engineers Standards J2567 (s. 350.095, Wis. Stats.). This decibel level is similar to that of a power tool, blender or hair dryer (USFS, 2011).

Introduction of a new type of sound

New snowmobile sound is unlikely to be introduced to the area under Alternative 1 given the trail's proximity to the current route (Alternative 4). Most of the areas within the park that would be impacted by Alternative 2 are already impacted by the current snowmobile route and the Military Ridge State Trail. Few, if any new areas within the park would experience snowmobile sound from the trail in Alternative 2. Depending on the exact siting of the trail, new areas, especially in the northwestern portion of the park, may experience snowmobile sound under Alternative 3.

Additional volume of snowmobile sound

The volume of snowmobile sound is unlikely to be different under Alternative 1 than the current route (Alternative 4). While few, if any, new areas of BMSP would be impacted by new snowmobile sound from the Alternative 2 trail, the volume of that sound may be greater. The level of additional volume is dependent on the location of a person relative to the snowmobile. As noted earlier, the loudest potential sound at 50 feet from a snowmobile is likely to be similar to a hair dryer, power tool or blender. Under Alternative 3 areas may experience additional volume of snowmobile sound. While dependent on the eventual siting of the trail, the additional sound would likely be less than that experienced by those areas that would be impacted by Alternative 2.

Additional frequency of the sound

Much of the park currently experiences snowmobile sound from the Military Ridge State Trail. Under Alternatives 1, 2 and 3 it is reasonable to assume that a more desirable trail would draw additional users. Under these alternatives new areas experiencing snowmobile sound may experience it as frequently as areas impacted by the Military Ridge State Trail.

Impacts to Other Recreation

Potential impacts of a snowmobile trail in BMSP on other recreation facilities, especially related to intersections of snowmobile and nonmotorized trails, have been a topic of public concern. Table 2 shows the number of times each snowmobile alternative trail would cross the trails in the mountain bike and cross-country ski alternatives. Mountain bike trails are included because they are often used for winter bicycling.



The service road utilized as a trail in Alternative 2 serves as a hiking trail when there is no snow cover and is occasionally utilized by snowshoers when it is snow covered. The snowshoe use of this trail would be relocated to create a more cohesive trail loop from an existing trailhead. Snowshoeing, as a pedestrian activity, may occur anywhere on the property. Thus, limiting the use of this trail when snowmobile trails are open in Dane County would not greatly impact the overall snowshoeing opportunity level.

Table 2. Number of nonmotorized and snowmobile trail crossings for each alternative

Trails	Cross-Country Ski Status Quo	Cross-Country Ski Alternative 1	Mountain Bike Status Quo	Mountain Bike Alternative 1
Snowmobile Alternative 1	2	1	1	0
Snowmobile Alternative 2	0	0	2	2
Snowmobile Alternative 3	0	0	0	0
Snowmobile Alternative 4	2	1	0	0

Other considerations such as sightlines, signage and speed limits will be appropriately addressed during draft plan formation or plan implementation.

Socioeconomic Impacts

Given the conceptual nature of the snowmobile alternatives it is difficult to fully estimate the fiscal impact of a potential new trail. The status quo route is not maintained by DNR and its selection would have minimal to no fiscal impact. The main costs associated with Alternatives 1 and 2 are snowmobile trail construction costs. The longer the trail that needs to be constructed, the higher the construction costs. Thus, Alternative 1 is likely to have higher construction costs than Alternative 2 given that Alternative 2 relies on an existing service road for much of its length. Alternatives 1 and 2 would likely be sited entirely on land currently owned by the State of Wisconsin and would not require the department to acquire land. Alternative 3, as conceptually drawn, is the longest trail and would require construction. Alternative 3 would not likely utilize any existing public land and thus, any land acquisition would have costs. Completion of Alternative 3 would likely to have the greatest fiscal impact of the snowmobiling alternatives. Local snowmobile clubs would be tasked with funding the construction and maintenance of the trails under all alternatives.

Snowmobiling was a major topic in the public input received during the initial public involvement phase and in past BMSP planning efforts. The input received was both in favor of and against developing a snowmobiling trail outside of the current route. The public input received on these alternatives will help the planning team assess the level of social impact each may have.

Potential Challenges

Continuation of snowmobiling in the park is likely to lead to social challenges. Motorized recreation activities are asymmetrical in their social impacts (Adelman, Heberlein, & Bonnicksen, 1982) (Lime, 1975) (Lucas, 1964) (Vitterso, Chipeniuk, Skar, & Vistad, 2004). Snowmobilers tend to accept other uses while those opposed to snowmobiling near their recreational activity may have negative reactions to snowmobiles. To address this potential social impact, Alternatives 1, 3 and 4 constrain motorized park uses to existing motorized corridors or new corridors away from existing uses.



Rates of snowmobile participation and the number of overall days during which snowmobiling can occur could pose a challenge to implementing Alternative 2. The length of the trail in Alternative 2, and the likely need for land acquisition associated with that alternative suggest that it represents a longer-term project than Alternative 1. Nationally, participation in snowmobiling is trending downward. By 2030, general participation in snowmobiling is expected to decline by 10%. Snowmobiling is dependent on favorable weather to maintain an adequate level of snow cover during winter months. When climate change is factored into participation models, a 39% decrease in total participation days is expected nationally (White, Bowker, Askew, Langner, & English, 2016). If this decrease is realized, a smaller user base may limit the ability of DNR and its partners to develop and maintain the trail.

Other Alternatives Evaluated

During the alternatives development process, the DNR planning team evaluated the possibility of a snowmobile trail that would connect the Military Ridge State Trail to the county snowmobile trail system north of the park by travelling east of the park. This alternative would have required landowner willingness to host a trail or sell property or easements for the snowmobile trail. Additionally, crossing Ryan Creek was identified as a challenge that would need to be addressed should the east side trail be proposed. The Ryan Creek crossing evaluated would have occurred at a different location than the crossing in Alternative 2.

After consulting with landowners in the affected area and identifying the Ryan Creek crossing as an issue, the DNR planning team no longer considers this route a viable option. As a result, it is not included as an alternative in this document. If solutions to these challenges are identified, the east side trail may be considered as an alternative for the draft plan. The public would have the opportunity to review this trail option during the draft plan review process.

The planning team also considered an option to develop two one-way snowmobile trails along Mounds Park and Ryan roads. Trail users would travel in the same direction as traffic, allowing for the trail to be closer to the road than 40 feet and potentially limiting the impacts to other recreational facilities. After evaluating the path of travel under this option, the planning team determined the trails would often be more than 40 feet from the road due to terrain obstacles. The alternative was removed from consideration as the trails would be more costly and create additional intersections with nonmotorized trail uses without realizing the benefits of being closer to the road.

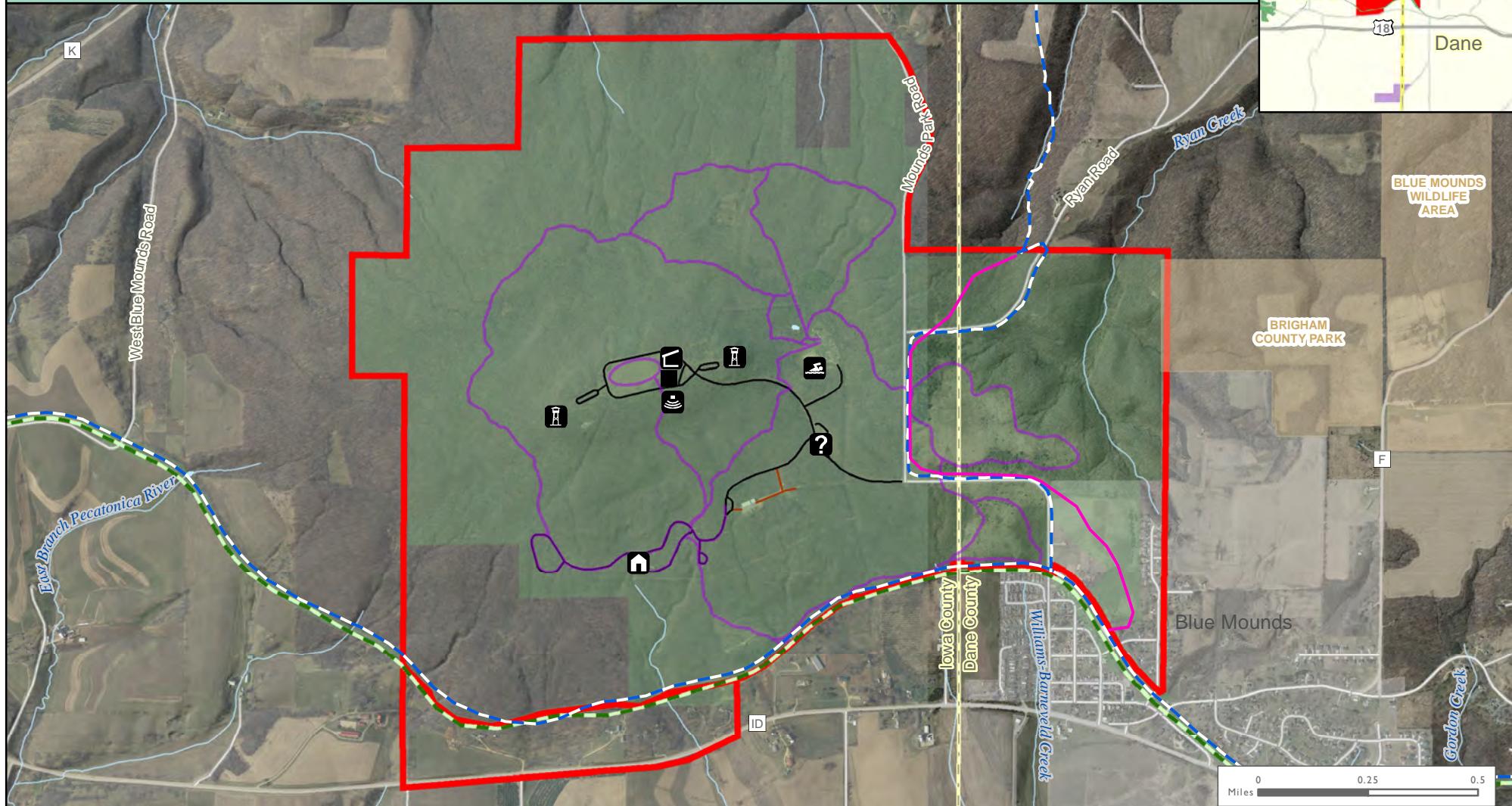
The planning team also evaluated the option of closing the current snowmobile route. The department prefers to maintain existing uses of the park and support connections to other recreation opportunities outside the park when possible. Thus, an alternative of no longer allowing any snowmobile connection route within BMSP is not currently recommended for inclusion in the draft master plan. The department may consider closing the route along Mounds Park and Ryan roads if Alternatives 2, 3 or other suitable connection from the Military Ridge State Trail to the county trail system north of the park is established.



BLUE MOUND STATE PARK

SNOWMOBILE TRAILS - ALTERNATIVE I

DRAFT



Project Boundary

Blue Mound
State Park

Two-Way Snowmobile Trail

Current County
Snowmobile Trail System

Cross Country
Ski Trail

Military Ridge
State Trail

DNR Road Open
to Motorized Access

DNR Road Closed
to Motorized Access

Tower

Entrance Station
Friends Shelter

Mayberry Cabin
Nature Center

Amphitheatre

Pool Concession

Dane County Parks

DNR Fee Title

WISCONSIN DEPARTMENT
OF NATURAL RESOURCES



Bureau of
Facilities and Lands
Oct 31, 2019
BMSP-9070-4
keg

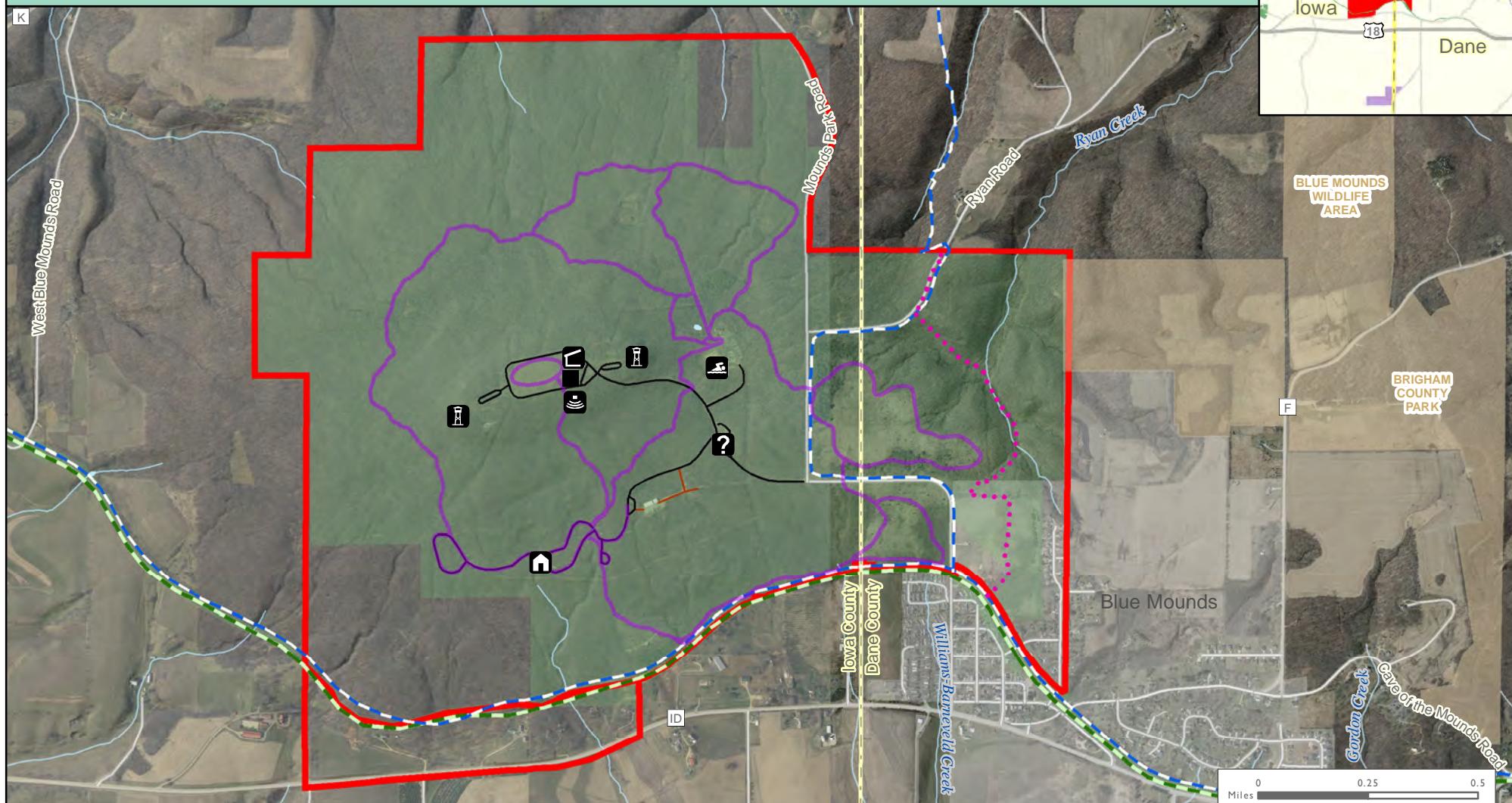
MAP-5

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

BLUE MOUND STATE PARK

SNOWMOBILE TRAILS - ALTERNATIVE 2

DRAFT



Project Boundary

Blue Mound State Park

- Service Road Trail
- Current County Snowmobile Trail System
- Cross Country Ski Trail

- Military Ridge State Trail
- DNR Road Open to Motorized Access
- DNR Road Closed to Motorized Access

- Tower (T)
- Entrance Station (E)
- Friends Shelter (?)

- Mayberry Cabin (M)
- Nature Center (N)
- Amphitheatre (A)
- Pool Concession (P)

- Dane County Parks
- DNR Fee Title

WISCONSIN DEPARTMENT OF NATURAL RESOURCES



Bureau of Facilities and Lands
Nov 01, 2019
BMSP-9070-5
keg

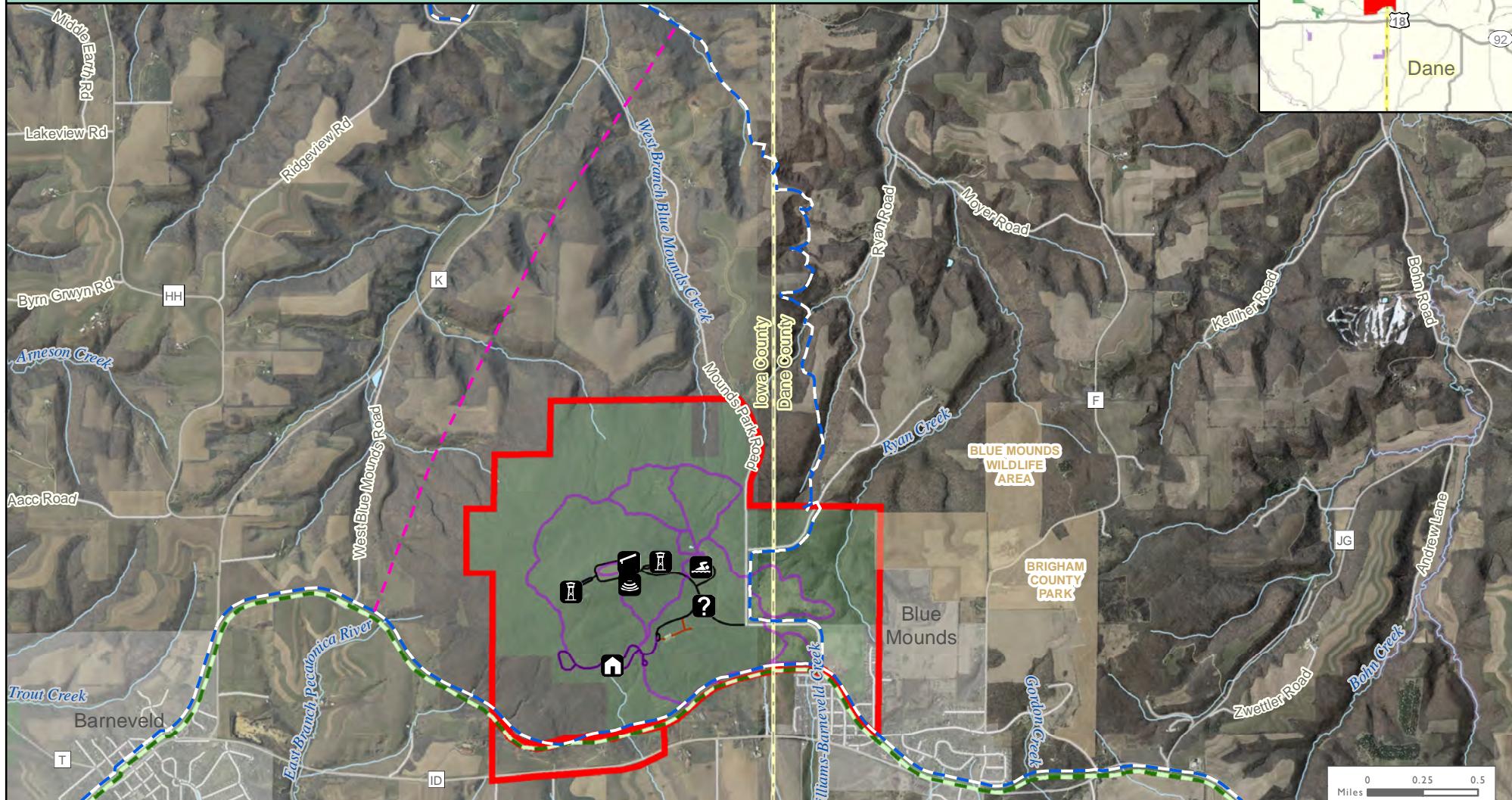
MAP-6

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

BLUE MOUND STATE PARK

SNOWMOBILE TRAILS - ALTERNATIVE 3

DRAFT



Project Boundary

Blue Mound State Park

Snowmobile Conceptual Connection - North Slope

Current County Snowmobile Trail System

Cross Country Ski Trail

Military Ridge State Trail

DNR Road Open to Motorized Access

DNR Road Closed to Motorized Access

Tower

Entrance Station

Friends Shelter

Mayberry Cabin

Nature Center

Amphitheatre

Pool Concession

Dane County Parks

DNR Fee Title

DNR Easement

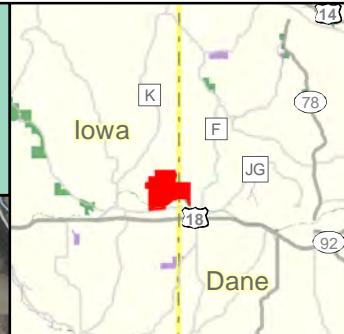
WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Bureau of Facilities and Lands Oct 31, 2019 BMSP-9070-6 kg



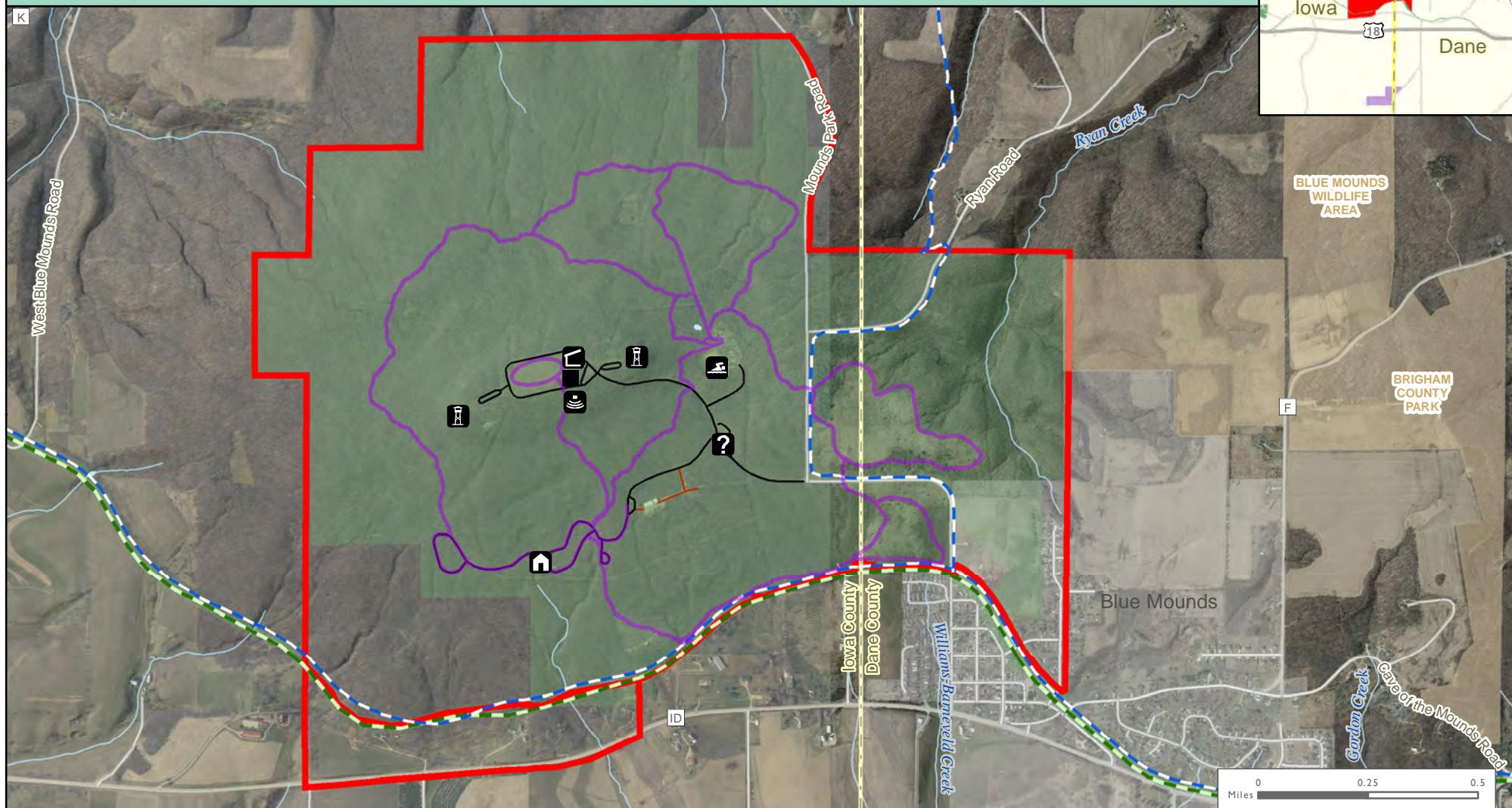
MAP-7

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.



BLUE MOUND STATE PARK SNOWMOBILE TRAILS - STATUS QUO

DRAFT



Project Boundary
Blue Mound State Park

— Current County
Snowmobile Trail System
— Cross Country
Ski Trail
— Military Ridge
State Trail
— DNR Road Open
to Motorized Access
— DNR Road Closed
to Motorized Access

Tower
Entrance Station
Friends Shelter

Mayberry Cabin
Nature Center
Amphitheatre
Pool Concession

Dane County Parks
DNR Fee Title

WISCONSIN DEPARTMENT
OF NATURAL RESOURCES



Bureau of
Facilities and Lands
Nov 01, 2019
BMSM-9070-7
keg

MAP-8

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

Additional Recreation Management Topics for Which DNR Is Currently Not Considering Changes To Current Management

Many of Blue Mound State Park's current recreational offerings are well suited to serve the park's visitors into the future. The DNR planning team is currently only considering status quo management for the following activities and topics:

- Hiking
- Hunting and Trapping
- Observation Towers
- Road Bicycling
- Sledding
- Snowshoeing
- Swimming

Under the status quo alternative for these activities, the current facilities would be maintained. Minor trail relocating may also be allowed as necessary to ensure a sustainable trail system. Many visitors to the park enjoy visiting the observation towers. Under the status quo management, these towers would be maintained. If, in the future, they are closed due to safety concerns, the towers may be authorized to be re-built as practical and feasible.

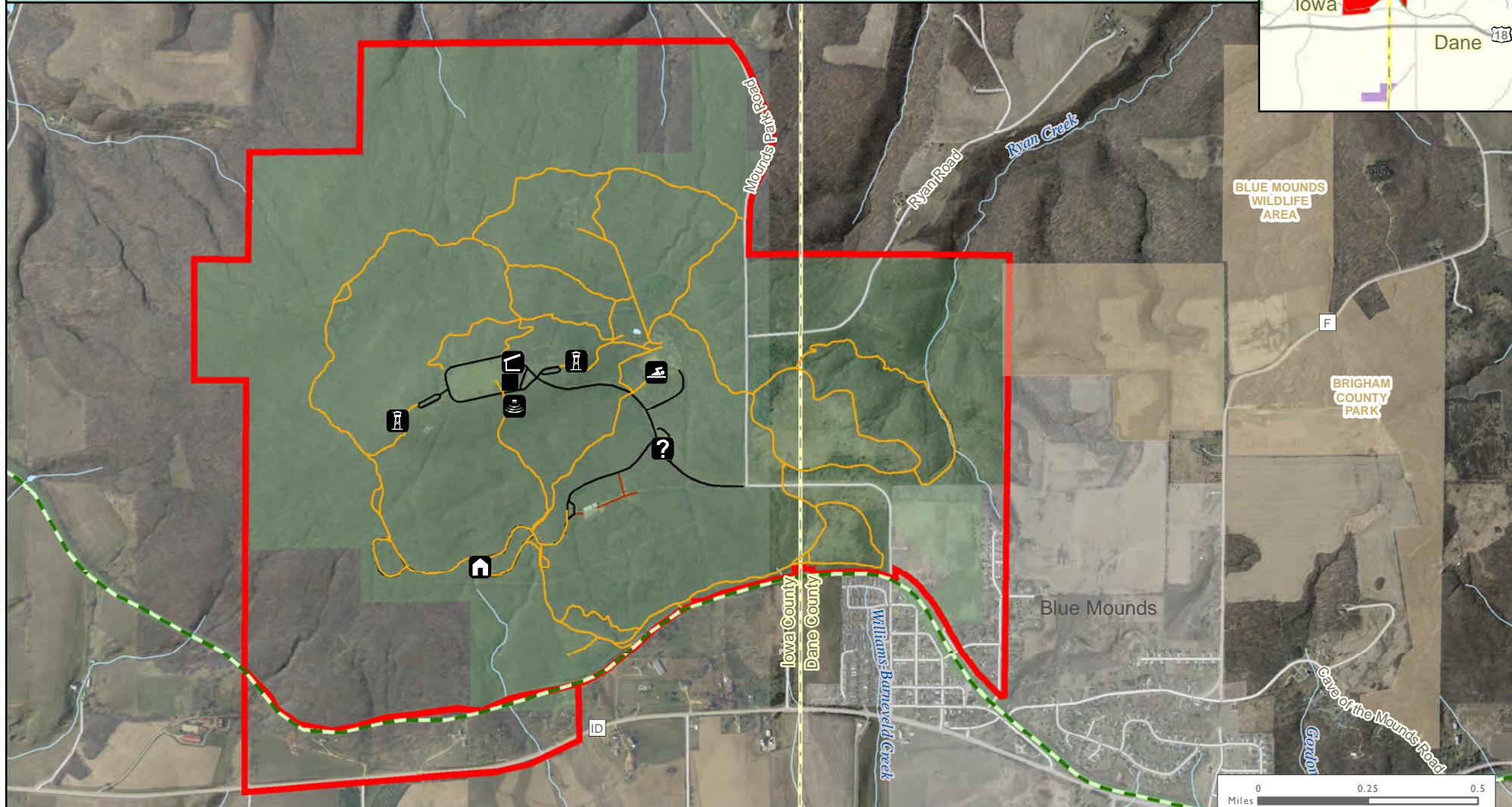
While hiking is listed as a status quo alternative, slight modifications or additions to the hiking trail system may be authorized in the draft master plan. The DNR planning team is aware of the efforts of local non-profit groups to create a hiking experience known as the Driftless Trail, linking several DNR properties. While these efforts are in their early planning stages, the department expects BMSP may host a portion of the Driftless Trail should it come to fruition. DNR is currently working with Driftless Trail advocates to evaluate options for where the Driftless Trail may enter and exit the park.



BLUE MOUND STATE PARK

HIKING TRAILS

DRAFT



Project Boundary

Blue Mound
State Park

Current Hiking Trail
Military Ridge
State Trail

DNR Road Open
to Motorized Access
DNR Road Closed
to Motorized Access

Tower
Entrance Station
Friends Shelter

Mayberry Cabin
Nature Center
Amphitheatre
Pool Concession

Dane County Parks
DNR Fee Title

WISCONSIN DEPARTMENT
OF NATURAL RESOURCES



Bureau of
Facilities and Lands
Sep 25, 2019
BMSP-9070-10
keg

MAP-9

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

Natural Resources Management Alternatives for Blue Mound State Park

The DNR planning team has developed a general description of Blue Mound State Park (BMSP) natural resources management that may be included in the BMSP Master Plan. The planning team is seeking public input as it refines this general description into the more detailed management objectives and prescriptions that would be part of the draft master plan.

This document divides BMSP three general natural resources zones, as shown on Map 10, for which similar natural resources management may be planned in the draft master plan:

- Forest Zone
- Oak Transition and Prairie Zone
- Camping and Day Use Zone

These three zones may be altered or further divided into more detailed management areas when the draft plan is written. The remainder of this document describes the natural resources management under consideration for each zone and gives a description

what the public may expect to see should that management be implemented.

Current natural resources management at the park is primarily passive. The management that does take place is to remove invasive species and maintain safe conditions for park users. The resource management options described in this document is more active. It is meant to maintain the ecological health of the property while continuing to provide the natural, aesthetically pleasing park setting many of the park's users expressed appreciation for during the initial public comment period.

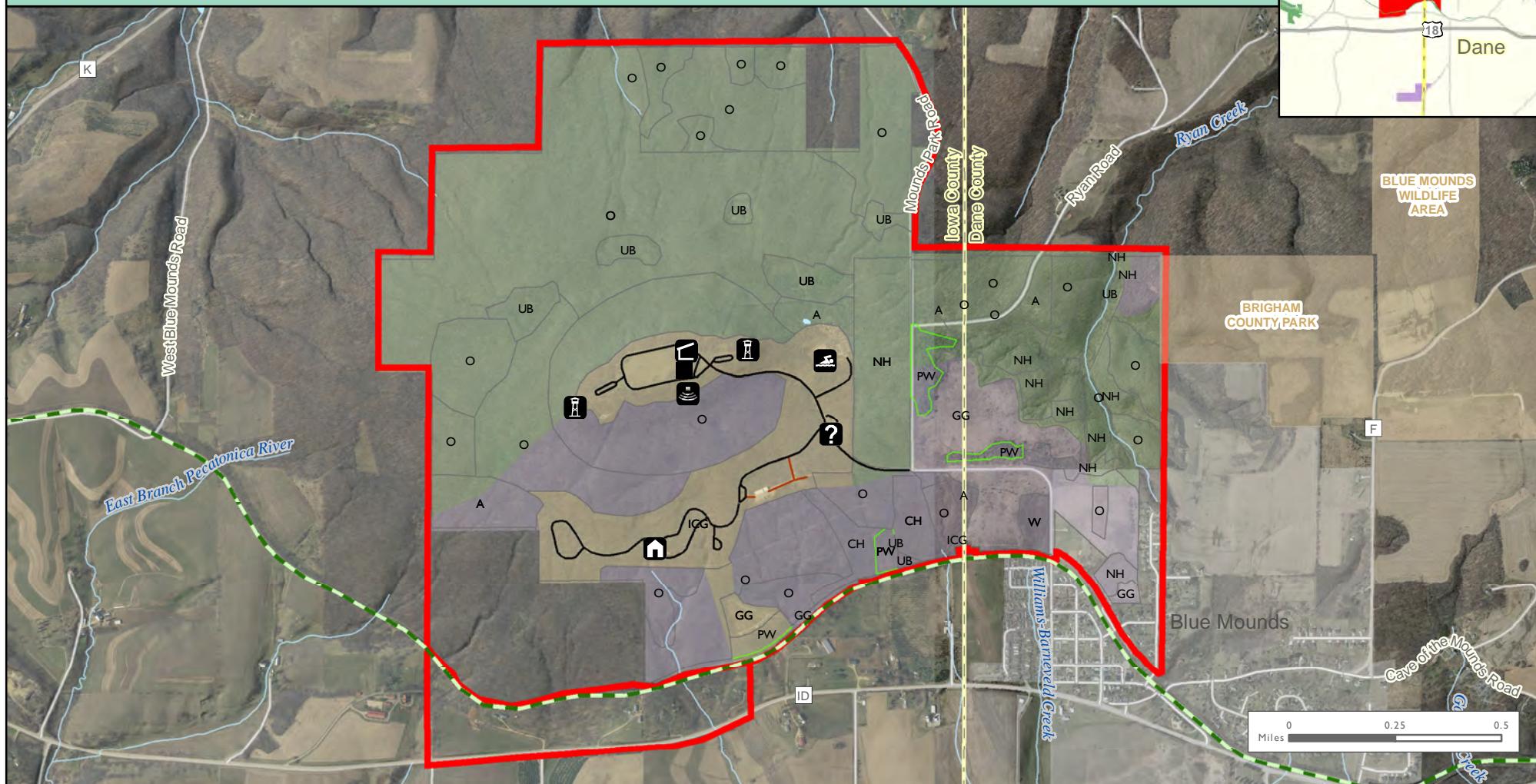


Image 4. Bloodroot at Blue Mound State Park.



BLUE MOUND STATE PARK NATURAL RESOURCE ZONES

DRAFT



Project Boundary
Blue Mound State Park

— DNR Road Open to Motorized Access
— DNR Road Closed to Motorized Access
— Military Ridge State Trail

Tower
Entrance Station
Friends Shelter
Mayberry Cabin
Nature Center
Amphitheatre
Pool Concession

White Pine Stands
Forestry Stands
Natural Resource Zones
Day Use and Camping
Forest
Oak Transition and Prairie

Forestry Stand Key
A = Aspen
CH = Central Hardwoods
GG = Ture Grasses
ICG = Campground

NH = Northern Hardwood
O = Oak
PW = White Pine
UB = Upland Brush
W = Walnut

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Bureau of Facilities and Lands
Sep 25, 2019
BMSM-9070-11 keg

MAP-10

The data shown on this map have been obtained from various sources, and are of varying age, reliability and resolution. This map is not intended to be used for navigation, nor is this map an authoritative source of information about legal land ownership or public access. Users of this map should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map.

FOREST ZONE

The north and west slopes of Blue Mound within the Forest Zone are primarily oak. The Pleasure Valley area, which is also largely in the forest zone is primarily northern hardwoods, with a strong sugar maple component. The DNR planning team has developed two management alternatives for the Forest Zone.

- Alternative 1: Large Hardwoods Management
- Alternative 2: Large Hardwoods Management with Oak Component

Table 3 shows topics of consideration for each potential management alternative.

Current Management

Current resource management in the Forest Zone is primarily passive. The limited active resource management that does occur is to ensure safe recreational use of the property and control invasive species. Management that presently occurs includes invasive species and hazard tree removal.

To learn more about how DNR generally manages the features that occur in the Forest Zone, click the links below to access each topic's [Property Planning Common Element](#).

Cover Types

[Northern Hardwoods](#)

[Central Hardwoods](#)

[Oak and oak-dominated mixed forest](#)

[Upland Shrub](#)

[Aspen](#)

[Sedge Meadow](#)

Ecological Features

[Bat Hibernacula](#)

[Ephemeral Pond](#)

[Forested Seep](#)

Management Impacts and Considerations

Management under both alternatives presented for the Forest Zone would prescribe more specific natural resource conditions and more active management activities than current management. The large hardwoods management described here would follow managed old growth management. This refers to a type of management as described in DNR's Old-growth and Old Forests Handbook (Handbook 2480.5). The primary goal of managed old growth areas is the long-term development and maintenance of some old-growth or old forest ecological attributes. Active management such as tree harvesting may occur to enhance or accelerate the development of old-growth compositional, structural, and functional attributes such as old and large trees.



Table 3. Forest Zone Management Alternative Considerations

Topic	Alternative 1: Large Hardwoods Management	Alternative 2: Large Hardwoods Management with Oak Component
Long-term Forest Composition	<p>Under Alternative 1, the primary management goal is the long-term development and maintenance of large trees and some old growth or old forest ecological attributes such as large and old trees. Minimal active forest management would take place. Instead natural processes would be allowed to determine the forest type.</p> <p>The use of minimal to no management in areas presently dominated by oak/central hardwood overstory (see Map 10) would allow for the natural conversion of these areas to central hardwoods including a significant red maple component. No long-term regeneration of oak stands would be expected, and oak presence would dwindle as existing oak trees get older.</p> <p>Areas presently dominated by northern hardwoods trees, primarily the Pleasure Valley area, would naturally succeed to northern hardwood managed-old growth forests. The northern hardwood timber type is comprised of mostly shade loving species that are very long lived.</p>	<p>Under the large hardwoods management with oak component management strategy, stands with high potential for maintaining oak dominated forests would be identified and managed as such. Long-term forest composition would likely be central hardwoods with managed oak pockets throughout the Forest Zone.</p> <p>Oak and northern hardwoods stands not identified as having high-potential for oak dominated forests would follow similar management as that described under Alternative 1.</p>
Management Activities	<p>Management under Alternative 1 is less active than Alternative 2. Active management that occurs under Alternative 1 would be targeted toward developing large hardwood trees and ecological characteristics associated with old growth forests. Management activities may include:</p> <ul style="list-style-type: none"> • Invasive species control. • Removal of hazard trees along trails and in other areas of high public use. • Limited timber harvest or salvage operations with individual tree selection practices in northern hardwood forest types. • Manipulation of regeneration management techniques which may include site preparation or fire treatment. 	<p>Management in the northern hardwood areas would be similar to Alternative 1.</p> <p>Management in central hardwood stands with a strong oak component would include practices necessary to maintain and regenerate oak. Active management in these areas may include:</p> <ul style="list-style-type: none"> • Invasive species control. • Commercial Timber harvest – thinning/overstory removal/clearcut. • Limited timber harvest or salvage operations. Individual tree selection practices in northern hardwood forest types. • Prescribed Fire • Intermediate treatment/seedbed preparation.



Topic	Alternative 1: Large Hardwoods Management	Alternative 2: Large Hardwoods Management with Oak Component
	<p>This management is meant to ensure desired seedlings succeed.</p> <p>Management that would occur in this zone would maintain canopy cover important to rare species throughout the Forest zone.</p>	<ul style="list-style-type: none"> Removal of hazard trees along trails or in other areas with high public use. <p>Management that would occur in this zone would maintain canopy cover important to rare species throughout the Forest zone.</p>
Access to Recreational Opportunity	<p>In general, access to recreation would be minimally impacted. Occasional trail closures lasting from several hours to several days may occur when hazardous trees are removed and invasive species are managed.</p>	<p>Access to recreational activities may occasionally be impacted, especially during intensive management activities such as timber harvests, prescribed burns or other oak regeneration activities. Occasional trail closures lasting from several hours to several days may occur when hazardous trees are removed and invasive species are managed. Management activities associated with oak regeneration practices may necessitate trail closures of several weeks to months depending on the location and size of the management activity. These management activities and would occur infrequently.</p> <p>Wildlife watching and hunting opportunities may change as many BMSP resident species are likely to be attracted to areas of regenerating vegetation following management activities. Oak stands are important food sources and habitat for wildlife. Nature education may also be enhanced as programming would be able to take advantage of the opportunity to explain management activities and the succession that follows.</p>
Aesthetic Impacts	<p>Under Alternative 1, little change in the aesthetics of northern hardwoods is expected. As oak forest areas age, the aesthetics are expected to change as oak trees die and are succeeded by species associated with the central hardwoods cover type. As succession occurs, areas with dying oaks would intermittently appear brushy as red maple and other species grow to fill canopy gaps.</p> <p>Due to the presence of recreational trails through much of Forest Zone, many of the dead and dying oak trees may need to be removed for public safety reasons. If this occurs, park visitors would encounter sights and sounds associated with timber cutting and removal, potentially at a commercial scale.</p>	<p>Under Alternative 2, little change is expected to the aesthetics of northern hardwoods areas. In areas where oak forests succeed to central hardwoods, the aesthetics are expected to change as oak trees die and are replaced by species associated with the central hardwoods cover type. As succession occurs, areas with dying oaks would intermittently appear brushy as red maple and other species grow to fill canopy gaps.</p> <p>Park visitors may encounter more extensive sight and sound impacts in areas of oak management. In areas where efforts to limit red maple or regenerate oak take place, park visitors would encounter the sights and sounds associated with active management. Some, such as charred vegetation, would last only days to weeks. Others, such as clearings in</p>



Topic	Alternative 1: Large Hardwoods Management	Alternative 2: Large Hardwoods Management with Oak Component
		<p>vegetation and signs of regenerating forest, may last for several months to years.</p> <p>Due to the presence of recreational trails through much of Forest Zone, many of the dead and dying oak trees may need to be removed for public safety reasons. If this occurs, park visitors would encounter sights and sounds associated with timber cutting and removal, potentially at the commercial scale.</p>
Challenges	<p>In general, access for natural resources management may be difficult as there are few trails or roads capable of supporting the equipment necessary to carry out this management strategy.</p> <p>Older oaks may become hazardous to users of the park. Identifying and removing potentially hazardous trees before they become dangerous can be difficult on a large scale.</p> <p>Oak stands are popular features on many DNR lands because of their aesthetic and their habitat contributions. Under this alternative the oak component of BMSP would decline or disappear over the long-term as oak stands succeed to central hardwoods.</p>	<p>In general, access for natural resources management may be difficult as there are few trails or roads capable of supporting the equipment necessary to carry out this management strategy. Temporary logging roads may need to be constructed to carry out management. Fully achieving resource management goals may also be difficult at BMSP due to the high density of trails in some areas.</p> <p>Older oaks may become hazardous to public users of the park. Identifying and removing potentially hazardous trees before they become dangerous can be difficult on a large scale. Implementing active management in a State Park environment can present several social challenges including public resistance to active resource management due to perceived loss of aesthetic and natural value. Temporary loss of recreational access due to closures during management activities can also create conflict.</p>



Other Forest Zone Management Considerations

Oak, northern hardwoods and central hardwoods are the most prominent cover types in the Forest Zone and are the main focus of the two management strategies discussed in Table 3. Small areas of upland brush and aspen are also present. Under either management alternative upland brush areas would primarily be passively managed, other than invasive species management, to allow them to naturally convert to forested cover types. The small aspen stands present in the Forest Zone would be converted to a cover type similar to those surrounding the aspen stands under either Forest Zone Management Alternative.

The [Rapid Ecological Assessment for Blue Mound State Park](#) (WDNR, 2015) identified the large forest blocks that are encompassed within the Forest Zone and continue outside of BMSP as important for area-dependent species, including forest interior birds. The planning team has prioritized management that is expected to maintain canopy cover important to some rare bird species, per management guidance.



Image 5. Northern hardwoods in the Pleasure Valley area of BMSP. Under both alternatives these stands would be managed for large hardwoods.





Image 6. A forest stand following a shelterwood harvest. Shelterwood harvest is a management option to spur oak regeneration under Alternative 2 in the Forest Zone. While the stand shown here is maple, a similar aesthetic could be expected for several years following the shelterwood harvest as oak seedlings are established. This type of intensive management is required if oak stands are to be retained at BMSP. The overall goal of maintaining canopy cover important to rare species within the Forest Zone would also be included.



OAK TRANSITION AND PRAIRIE ZONE

The Oak Transition and Prairie Zone on Map 10 is largely to the south and east of the top of Blue Mound. This zone encompasses areas of grassland, oak and small areas of northern hardwoods, central hardwoods and aspen. The zone also includes a small remnant prairie northeast of Pleasure Valley near the BMSP's shared boundary with Brigham County Park.

The planning team has developed one management alternative for the Oak Transition and Prairie Zone. Potential management may include maintenance, or expansion, of the prairie areas, management for oak woodland, and management for a transition from oak forest to oak woodland and oak savanna (Image 9 and Image 10) to prairie if feasible. Management for sensitive resources, such as caves and bat roosting areas, would also be included. Under the management in this alternative, prairie and grasslands within this zone would be maintained with potential expansion being considered and undertaken if the ecological and public use context present the opportunity.

To learn more about how DNR generally manages the features that occur in the Oak Transition and Prairie Zone, click the links below to access each topic's [Property Planning Common Element](#).

Cover Types

[Aspen](#)

[Conifer Plantations](#)

[Oak and Oak Dominated Mixed Forest](#)

[Oak Savanna \(includes Oak Opening and Oak Woodland\)](#)

[Remnant Prairie](#)

[Surrogate Grasslands \(Planted Prairie, Warm-season, Cool-season Grass\)](#)

Ecological Features

[Bat Hibernacula](#)

Current Management

Current management in the Oak Transition and Prairie Zone primarily maintains current conditions and recreational safety. In forested areas, this management is primarily passive, except to manage for recreational use safety and invasive species. Grassland areas are mowed, and prescribed fire has been used in the past. The conifer plantations are passively managed and have advanced past biological maturity. If current management in conifer plantations continues, tree health may suffer, potentially harming the aesthetics and causing safety concerns.

Management Impacts and Considerations

Compared to the other resource management zones described in this document, resource management in the Oak Transition and Prairie Zone may be the most active, if it is feasible to fully implement. Considerations for each component of this zone are shown in Table 4.

The management described for the Oak Transition and Prairie Zone in this document would prescribe more active and intentional natural resource conditions than current management. The management described here would be more active than what currently occurs. This would especially be true in the oak stands as they will be converted to oak woodland and savanna areas.



Table 4. Oak Transition and Prairie Zone Management Considerations

	Oak Opening and Woodland	Prairie and Grasslands	Conifer Plantations
Long-term Cover	<p>The oak stands in this zone would be converted to oak opening and woodland. This is the long-term goal cover type.</p> <p>These habitats represent a transition of canopy coverage that lies between wide-open, treeless prairies and totally enclosed forest. Oak would be the dominant overstory species. Oak opening is generally comprised of less than 50% canopy coverage, with characteristic open-grown tree structure. Oak woodland is generally 50-95% canopy coverage, often dominated by white oak, with a more forest-grown tree structure (taller and narrower trees), and an open understory. The herb layer within these transition areas is potentially diverse, including some members of the prairie and oak forest communities, but also featuring grasses, legumes, composites and other forbs that are best adapted highly filtered shade conditions.</p>	<p>Current prairie and grassland areas would be maintained. They may be expanded to meet recreation and resource management needs.</p>	<p>Four conifer plantations are present at BMSP. Management for these will be different by stand (labeled on Map 10):</p> <ol style="list-style-type: none"> 1. Conifer Plantations 1 (five acres) & 4 (seven acres) would be managed using big tree management techniques. This would result in scattered, large white pines with small areas of other cover types (likely central hardwoods) between the large trees. 2. Conifer Plantation 2 is three acres in size and would be converted to a different long-term cover type, most likely oak opening or woodland 3. Conifer Plantation 3 is three acres in size would be converted to a different long-term cover type, most likely grassland.
Management Activities	<p>Management in areas selected to convert to oak opening and woodland may include:</p> <ul style="list-style-type: none"> • Prescribed Fire • Mowing and brushing • Timber Stand Improvement • Invasive species control. 	<p>Management in prairie and grassland areas may include:</p> <ul style="list-style-type: none"> • Prescribed Fire • Mowing, brushing and haying. • Invasive species control. 	<p>Conifer plantations that are converted to other cover types may be commercially cleared or thinned to allow natural succession to the desired cover types.</p> <p>Conifer plantations managed using big tree silviculture techniques may be commercially thinned to</p>



	Oak Opening and Woodland	Prairie and Grasslands	Conifer Plantations
Access to Recreational Opportunity	<ul style="list-style-type: none"> Removal of hazardous and undesirable trees, especially near public use areas. This may include commercial timber sales. <p>In general, access to recreation is expected to be minimally impacted. Occasional trail closures lasting several hours to days may occur when hazardous trees are removed or invasive species are managed. Trail closures of several days to weeks may also occur due to prescribed burns or timber harvests.</p> <p>Wildlife watching may be changed as many BMSP resident species may be attracted to areas of regenerating vegetation. Nature education may also be enhanced as programming may be able to take advantage of the opportunity to explain management activities and the succession that follows.</p>	<p>Access to recreation is expected to be minimally impacted. Occasional trail closures lasting several hours to days may occur when invasive species are managed or prescribed burns take place.</p> <p>Nature education may also be enhanced as programming may be able to take advantage of the opportunity to explain management activities and the succession that follows.</p>	<p>encourage lower overall density and larger tree size.</p> <p>In general, access to recreation would be minimally impacted. Occasional trail closures lasting several hours to days may occur when conifer plantations are cut.</p> <p>Conifer Plantation 4 is near a popular ski trail. When big tree silviculture management is employed, snow conditions on the trail may be altered for several years due to changes in tree cover. These impacts are likely to only be noticed late in the ski season but may have small impacts on access to skiing when they occur. It is anticipated that as the remaining pines grow large and the areas between these trees transition to northern hardwoods cover the late-season snow conditions would be similar to current late-season snow conditions. No long-term impact to skiing opportunity is anticipated.</p>
Aesthetic Impacts	<p>When management to create oak transition areas (oak opening habitat) occurs, park visitors would encounter extensive sight and sound impacts associated with active management. Some, such as charred vegetation, would last days to weeks. Others, such as clearings in vegetation and</p>	<p>During active management park visitors may encounter sights and sounds associated with machinery used to brush and mow prairies. Visual impacts may be present following a prescribed burn for several days to weeks. Long-term</p>	<p>Areas with conifer plantations managed using big tree silviculture techniques are expected to have long-term aesthetic improvements as large trees are generally considered aesthetically desirable. Noise and visual impacts lasting several hours to weeks may occur during</p>



	Oak Opening and Woodland	Prairie and Grasslands	Conifer Plantations
	<p>signs of regenerating vegetation, may last for several months to years.</p> <p>Long-term, the aesthetic of the oak forest is likely to change to be more open.</p>	aesthetic impacts would be minimal to non-existent.	<p>management and visual impacts may persist after.</p> <p>Areas where conifer plantations are converted may experience visual impacts lasting several hours to days during management and visual impacts may persist for weeks to months after. Long-term, the overall aesthetic would be improved as areas are incorporated into surrounding cover types.</p>
Challenges	<p>Oak opening and woodland conversion may be labor and resource intensive. Implementing active management in a State Park environment can present several social challenges including:</p> <ul style="list-style-type: none"> • Public resistance to active resource management due to perceived loss of aesthetic and natural value • Temporary loss of recreational access due to closures during management activities can create conflict 	<p>Grassland areas require frequent maintenance to control invasive species and halt forest encroachment.</p>	<p>The conifer plantation near Pleasure Valley ski trail has been the subject of public interest during past planning efforts. This stand would be managed using big tree silviculture techniques. If cutting occurs to release other pines to grow, public concerns may arise that the trees would no longer provide shade to the ski trail. In the long-term, these trees are likely to be healthier and provide additional shade. In the short term, some shading may be lost.</p>

Other Oak Transition and Prairie Zone Management Considerations

Management described for the Oak Transition and Prairie Zone is consistent with DNR identified opportunities in the Wisconsin Wildlife Action Plan and Rapid Ecological Assessment for Blue Mound State Park. Additionally, portions of this zone fall in the high potential zone for Rusty Patched Bumble Bee as identified by the United States Fish and Wildlife Service (USFWS, 2019). Oak Woodland and the early blooming flowers associated with them are thought to be beneficial to this federally endangered species. Conversion of conifer plantations to other cover types is a common practice on DNR lands. The conifer plantations converted would convert to oak opening and woodland areas or prairie and grassland areas, both major opportunities for management identified for the Southwest Savanna in the Wisconsin Wildlife Action Plan (WDNR, 2015).





Image 7. Prescribed fire in a white oak woodland. Prescribed fire may be a management tool used to develop oak woodland and savanna in this zone.





Image 8. Spring green-up following fire management in a white oak woodland.





Image 9. The long-term result of oak woodland management. A similar aesthetic is expected in the oak stands managed for oak woodland within the Oak Transition and Prairie Zone.



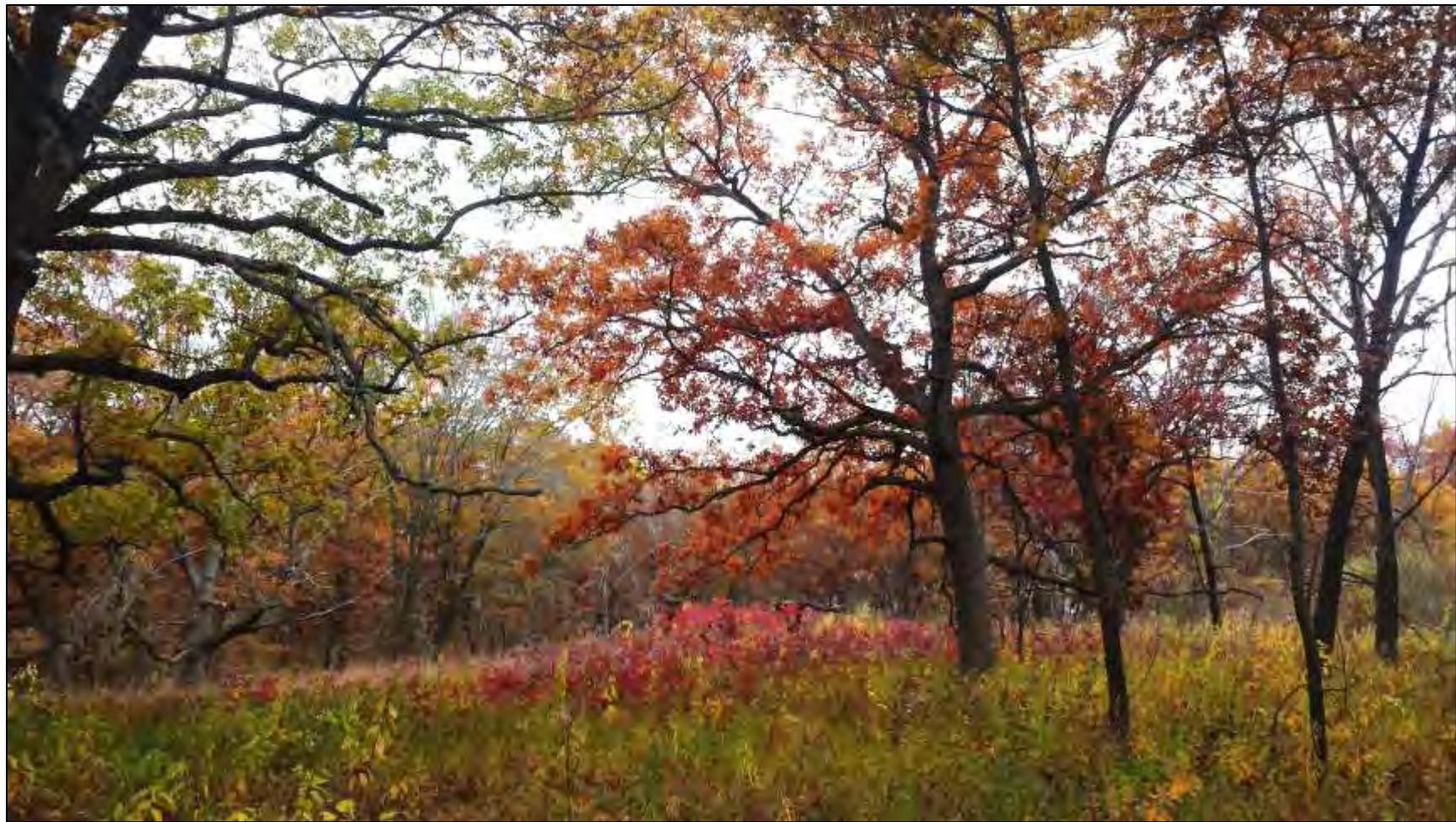


Image 10. Oak Savanna to prairie transition area. This type of cover would be the goal in areas of the Oak Transition and Prairie Zone where the oak woodland begins to meet the prairie.



CAMPING AND DAY USE ZONE

The Camping and Day Use Zone on Map 10 encompasses the heavily used camping and day use areas of Blue Mound State Park as well as areas that may become more developed in the future.

Management in this zone would primarily be for aesthetics and safety. Generally, this may include:

- Managing for larger trees.
- Creating sense of seclusion, especially in the campground areas.
- Cutting vegetation near lookouts and observation areas to maintain views.
- Removing hazardous or diseased trees.
- Protecting sensitive resources areas.



Current Management

The management described for this zone would continue current management.

Image 11. A lookout point from atop Blue Mound. Management that maintains viewsheds and creates an aesthetically-pleasing natural setting will continue under the resource management described in this document.

Management Impacts and Considerations

Management in this area would be active and in-line with what the public may expect to encounter in higher use areas. The public may occasionally encounter active management activities or areas that appear disturbed as a result of these activities. Examples of active management that may occur in this area include:

- Diseased or hazardous tree removal.
- Invasive species control.
- Clearing of vegetation blocking scenic lookout areas.



References

- Adelman, B. J. E., Heberlein, T. A., & Bonnicksen, T. M. (1982). Social psychological explanations for the persistence of a conflict between paddling canoeists and motorcraft users in the Boundary Waters Canoe Area. *Leisure Sciences*, 5, 45–61.
- Dane County, Wisconsin. (2017). Dane County Snowmobile Trail Opening and Closing Policy and Procedure. Accessed at: https://www.danecountyparks.com/documents/SnowmobileTrailManagement/OpenClose_Policy_09_21_2017.pdf
- Lime, D. W. (1975). Backcountry river recreation: Problems and opportunities. *Naturalist*, 26, 1–6.
- Lucas, R. C. (1964). Wilderness perception and use: The example of the Boundary Waters Canoe Area. *Natural Resources Journal*, 3, 394–411
- Minnesota Pollution Control Agency (MPCA). 2015. A Guide to Noise Control in Minnesota – Acoustical Properties, Measurement, Analysis, and Regulation. Document number: p-gen6-01.
- Sumara, T. and Tsitsoni, T. Road noise traffic reduction by vegetation in the ring road of a big city. Proceedings of the International Conference on Environmental Management, Engineering, Planning and Economics. Pp. 2591-2596. Skiathos, June 24-28, 2007.
- United States Department of Agriculture. 1980. Predicting Impact of Noise on Recreationists. United States Environmental Protection Agency. Washington DC. Accessed at: <https://www.fs.fed.us/t-d/pubs/pdfimage/80231202.pdf>.
- United States Forest Service. 2011. Final Environmental Impact Statement for the South Fowl Lake Snowmobile Access Project. Accessed at: <https://www.fs.usda.gov/project/?project=29665>.
- White, E.M., J.M. Bowker, A.E. Askew, L.L. Langner, J.R. Arnold, and D.B.K. English. 2016. Federal Outdoor Recreation Trends: Effects on Economic Opportunities. United States Department of Agriculture.
- Wisconsin Department of Natural Resources (WDNR). 2018. Recreation Opportunities Analysis (Chapter 8). Accessed at: <https://dnr.wi.gov/topic/Lands/RecAnalysis/>.

All images unless otherwise noted are by Wisconsin DNR.

