Sauk Prairie Recreation Area

Draft Master Plan &
Environmental Impact Statement
August, 2015

Wisconsin Department of Natural Resources
Bureau of Parks & Recreation
Figure 1: Conceptual map of the future Sauk Prairie Recreation Area.
Master Planning Teams

Plan Acceptance Team
Dan Schuller ...................... Director, Bureau of Parks & Recreation
Thomas Hauge ...................... Director, Bureau of Wildlife Management
Erin Crain ...................... Deputy Administrator, Land Division and Director, Bureau of Natural Heritage Conservation
Jim Warren ..................... Section Chief, Bureau of Forest Management
Steve Miller ...................... Director, Bureau of Facilities and Lands
Paul Cunningham .................... Staff Specialist, Bureau of Fisheries
Jack Sullivan ...................... Director, Bureau of Science Services
John Budzinski .................... District Supervisor, South Central District Air & Waste Division

Sponsors
Dan Schuller ...................... Director, Bureau of Parks & Recreation
Mark Aquino ...................... Director, Office of Business Support and Sustainability

Core Team
Steve Schmelzer ...................... Property Supervisor, Bureau of Parks & Recreation
Nancy Frost ...................... Wildlife Biologist, Bureau of Wildlife Management
Jeff Prey ..................... Planner, Bureau of Parks & Recreation
Paul Zajackowski .................... Southwest District Supervisor, Bureau of Parks & Recreation
Aaron Young ...................... Dodgeville Area Forestry Leader, Division of Forestry
Andy Barta ...................... Environmental Analysis Specialist, Bureau of Environmental Analysis and Sustainability
John Pohlman ........ Planner, Bureau of Facilities and Lands

Program Representatives
Paul Zajackowski .................... Southwest District Supervisor, Bureau of Parks & Recreation
Peter Biermeier ...................... Section Chief, Bureau of Parks & Recreation
Eric Lobner ...................... Southern District Supervisor, Bureau of Wildlife Management
Bill Ishmael ...................... Dodgeville Area Supervisor, Bureau of Wildlife Management
Kate Fitzgerald ...................... Section Chief, Bureau of Facilities & Lands
Linda Hanefeld .................... South Central Team Supervisor, Bureau of Remediation and Redevelopment
Mary Ann Buenzow .................... Southern District Forestry Leader, Division of Forestry
Dave Rowe ..................... Fitchburg Team Supervisor, Bureau of Fisheries Management
Mike Green ...................... Conservation Warden, Bureau of Law Enforcement
Russ Anderson .................... South Central Program Manager, Bureau of Environmental Analysis and Sustainability
Kris Hess ...................... Bureau of Legal Services

Staff Team Members
Craig Anderson ........ Bureau of Parks & Recreation John Olson .................... Bureau of Facilities & Lands
Ar mund Bartz ........ Bureau of Natural Heritage Conservation Pam Phelan .................... Bureau of Facilities & Lands
Jim Carter ........ Bureau of Parks & Recreation Jennifer Redell ........ Bureau of Natural Heritage Conservation
Ron Daggett .......... Bureau of Facilities & Lands Dave Sample ........ Bureau of Science Services
Mark Dudzik ........ Bureau of Facilities & Lands Jean Unmuth ........ Bureau of Water Quality
Ann Freiwald .......... Bureau of Facilities & Lands Missy Vanlanduyt ...... Bureau of Parks & Recreation
Bruce Henderson ...... Bureau of Forest Management Keith Warnke ........ Bureau of Law Enforcement
Sue Johansen ........ Bureau of Parks & Recreation Paul White ........... Bureau of Natural Heritage Conservation
Mike Mossman ........ Bureau of Science Services Dana White-Quam ..... Bureau of Parks & Recreation
Woody Myers ........ Bureau of Remediation & Redevelopment Ryder Will ........... Bureau of Parks & Recreation
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All Department of Natural Resources properties are required to be covered by a Master Plan describing the scope, purpose and management of the project. This Master Plan complies with NR 44, Wis. Adm. Code - Master Planning for Department Properties.
Acronyms

BAAP ..................... Badger Army Ammunition Plant
BHG ..................... Badger History Group
BIG ..................... Badger Intergovernmental Group
BOMC ..................... Badger Oversight and Management Commission
BOW ..................... Badger Ordnance Works, the original name of the complex
BRC ..................... Badger Reuse Committee
BVSD ..................... Bluffview Sanitary District
DATCP ..................... Wisconsin Department of Agriculture, Trade, and Consumer Protection
DFRC ..................... Dairy Forage Research Center
DLSP ..................... Devil’s Lake State Park
DOA ..................... Wisconsin Department of Administration
DOT ..................... Wisconsin Department of Transportation
DNR ..................... Wisconsin Department of Natural Resources
FLP ..................... Federal Lands to Parks program
GSA ..................... General Services Administration
GST ..................... Great Sauk Trail
HCN ..................... Ho-Chunk Nation
NPS ..................... National Park Service
NRB ..................... Natural Resources Board
PDMD ..................... Power driven mobility devices
RPA ..................... Regional and Property Analysis
SCORP ..................... Statewide Comprehensive Outdoor Recreation Plan
SPRA ..................... Sauk Prairie Recreation Area
USDA ..................... United States Department of Agriculture
USH, STH, CTH ....... United States Highway, State Highway, County Highway
WAP ..................... Wildlife Action Plan

1 Badger Army Ammunition Plant is sometimes referenced as BAAAP, which follows Army protocol of using the first two letters of a place’s first word in acronyms.
Definitions

Native, surrogate, and degraded

The existing habitats at SPRA are in a wide variety of conditions. Although the term “surrogate” is most often associated with grasslands, in this master plan the terms “native,” “surrogate,” and “degraded” apply to all habitat types and are defined as follows:

Native

Native habitats are those dominated by native plant species and that are able to maintain functioning ecological processes (e.g., fire, nutrient cycling, species interactions). These can be either areas of remnant, unplowed sod or restorations using local genotypes of a reasonably wide diversity of native grasses, forbs, and (for savannas and forests) shrubs and trees. When in large tracts, native lands typically provide important habitat for native vertebrates. Remnant and unplowed areas, even if only small sites, often harbor a diversity of native invertebrates. An example of a native habitat at SPRA is the Hillside Prairie.

Surrogate

Surrogate habitats are those dominated by non-native plant species or a mix of native and non-native plants that meet some life history needs of native animals. These areas may be of limited ecological value as native communities, but when in large blocks (e.g., for grasslands about 80 acres, or smaller if contiguous with other open habitats) they typically provide habitat structure that supports many native animals (notably birds), including several with high conservation need. Converting these lands to native habitats often requires planting and other intensive management techniques. Examples of surrogate habitat at SPRA are: (1) the grasslands in the Rocket Area, (2) the former pasture in the Magazine Area with non-native grasses and scattered cottonwood trees that mimic native savanna and (3) the former agricultural lands in the Northeast Moraine that have succeed to dense stands of early successional trees and exotic shrubs.

Degraded

Degraded habitats are those that retain some of the species or characteristics of native habitats, but which may have an altered species composition (including invasive species) or structure, or have reduced ecological function. They may or may not support most native animals based on their condition. Restoration of these areas depends greatly on the habitat and type of degradation; a degraded oak savanna with good structure might require management actions such as fire or thinning, while an extensive thicket of invasive shrubs might need more intensive techniques like clearing and replanting. Degraded sites must each be evaluated independently for the type of management needed to restore them to a more desirable condition. An example of a degraded habitat at SPRA is an overgrown oak opening in the Magazine Area that has many large, open-grown oak trees in a forest of younger trees.

Grassland to forest continuum

Since naturalists first started exploring the state, different terms have been used to characterize Wisconsin’s landscape. The following terms are defined here to clarify the continuum of habitats found at SPRA.

Grasslands

In this master plan, grasslands are defined as open areas largely without trees and dominated by a wide range of grasses and forbs. Although grasslands have an open aspect, portions may have up to 25% shrub or woody cover. Many of the grasslands at SPRA have been highly disturbed and have a significant invasive species component. Indeed, in many portions of SPRA there are few, if any, native grasses and forbs present.
Oak savanna, oak opening, and oak woodland

The term “savanna” has never been well defined. In the Midwest, savanna is generally used to describe an ecosystem that was historically part of a larger complex bordered by the prairies of the west and the deciduous forests of the east. The savanna complex was a mosaic of plant community types that represented a continuum from prairie to forest. Savannas were the communities in the middle of this continuum. The mosaic was maintained by frequent fires and possibly by large ungulates such as elk.\(^2\) Oaks were the dominant trees, hence the oft-used term “oak savanna” to describe this general habitat type.

Because savannas grade into both prairie and forest, there are no clear dividing lines between it and these two communities. The Department includes three habitats (native plant communities) under the “oak savanna” umbrella, two of which occur at SPRA: oak openings and oak woodlands. Oak barrens, which occur on sand soils, are a third type of oak savanna, but historically did not occur on SPRA.

In this master plan, oak openings are defined as areas with scattered trees mixed with patches of grassland openings as well as small groves of more densely growing trees. Overall, between 10 and 50% tree canopy exists. In high quality examples, bur, white, and black oaks are dominant in mature stands as large, open-grown trees with distinctive widespread limb architecture. Shagbark hickory is sometimes present. American hazelnut is a common native shrub. The herb layer is typically a mix of those found in oak forests and prairies along with several savanna specialists.

Oak woodlands are defined as areas with more than 50% tree canopy but less than 95%. As with oak openings, there is often a diversity of tree density – small patches of open areas and dense groves of trees may be scattered through oak woodlands. In high quality examples, dominant trees included white, bur, and black oaks, sometimes mixed with red oak and shagbark hickory. Under a characteristic fire regime, shrub and sapling representation in oak woodlands would be minimal. The herb layer is potentially diverse, including some members of the prairie, oak opening, and oak forest communities, but also featuring grasses, legumes, composites and other forbs that are best adapted to light conditions of high filtered shade.

\(^2\) American Bison occurred in the area prior to Euro-American settlement, but were not present in the large herds common in the Plains.
Forest
In this master plan, forests are defined as areas with 75 to 100% tree cover. At SPRA, forests are mostly early to mid-successional in nature and most originated after 1942. Dominant trees include oaks, elms, cherry, box elder, cottonwood, and maples.

Figure 2 shows a generalized representation of the continuum from grasslands to oak openings to oak woodlands to forests and the structural overlap that occurs across these habitats.

Species of Greatest Conservation Need
Species of Greatest Conservation Need (SGCN) have low and/or declining populations that are in need of conservation action. They include various birds, fish, mammals, reptiles, amphibians and invertebrates (e.g., dragonflies, butterflies and freshwater mussels) that are:
- already listed as threatened or endangered;
- at risk because of threats to their life history needs or their habitats;
- stable in number in Wisconsin, but declining in adjacent states or nationally; or
- of unknown status in Wisconsin and suspected to be vulnerable.

SGCNs were identified in Wisconsin’s Wildlife Action Plan (WAP), a strategic approach to wildlife conservation that outlines priority conservation actions to protect species and their habitats. The plan encourages the involvement of all agencies, organizations, and private individuals in taking action to prevent wildlife from becoming endangered and offers a proactive way to conserve wildlife and natural places for future generations.

Facilities
In this document, the term “facilities” encompasses the broad range of structures and man-made features on the property. These include such things as buildings, picnic areas, roads, trails, parking lots, kiosks, and shelters.

Mountain biking, recreational biking, off-road biking trails
Different types of biking opportunities are proposed at SPRA. These are defined as:

Mountain biking = biking on narrow, often curving “single-track” trails that generally use native soils and incorporate naturally occurring materials (rocks, logs) into their design. Mountain biking can be physically difficult with potential for falls and requires bikes specifically built for such use (e.g., wider tires, sturdy frames, short turning radius). Generally speaking, riders cover up to 10 miles in a half-day outing.

Recreational biking = biking on trails surfaced with compacted aggregate or asphalt. Recreational biking, sometimes referred to as “family friendly” biking, can be done using traditional road bikes as well as hybrid bikes. Recreational bike trails are generally designed to be ridden by people with a wide range of abilities, including children. Depending on the surface, adult riders generally cover about 15 to 25 miles in a half-day outing.

Off-road trails = bike trails that are not shared by motor vehicles. All mountain biking trails are “off-road” trails.

Parts of the property
SPRA is comprised of two contiguous blocks of land. In this document, the phrase “main part of the property” refers to all of SPRA except for the Magazine Area.
Figure 3: View looking south from the overlook at the reservoir site. The Northeast Moraine and the Rocket Area are seen in the middle of the photo, while hills on the southeast side of the Wisconsin River are seen in the distance.
EXECUTIVE SUMMARY

This corner of the once expansive Sauk Prairie has a uniquely complicated and consequential human and natural history. The 7,300-acre Badger Army Ammunition Plant, known by many as simply “Badger,” has touched people’s lives in profound and uncommon ways and, as a result, justifiably engenders many passionate feelings. The land here means different things to people depending on how they connect to the property, it’s past and future.

At its inception, the Badger Ordnance Works, as the facility was initially named, was the largest manufacturer of propellant in the world. The construction and operation of the plant had significant impacts to the local communities. With over 10,000 workers involved in the initial construction in 1942 and over 6,000 people working in continuous shifts at the plant during WWII, the region quickly recovered from the Great Depression. Today, several local businesses remain that got their starts in the early days of Badger. Although the plant fueled economic growth, disposal of waste products and contaminants followed the protocols of the day, which are now recognized as improper and inadequate and resulted in contaminated soil and groundwater. Few places in the state have had such a significant impact on the daily lives of nearby residents who rightly have strong beliefs about future use of the property.

Prior to the construction of the plant, the site was home to some 80 farm families that raised a variety of crops and animals on the exceptionally fertile soils. On short notice, families – some who had farmed their land for generations – were evicted. Like the Native Americans before them, these families did not want to leave their homes. Those hoping to remain in farming were forced to quickly find other properties to purchase, followed by the grueling task of moving their animals, hay and stored grains, equipment, and personal possessions - all in the middle of winter. Some farm families, upset at the perceived cut-rate offers for their land, found themselves in the difficult position of petitioning the federal government for a fairer price at a time when the national mood encouraged self-sacrifice in the face of world war. The former residents and their descendants understandably have deep-seated feelings about this land and its future.

Beginning long before settlement by Euro-Americans, the Ho-Chunk people inhabited the area, growing numerous crops and living off of bison, elk, deer and other game. The Ho-Chunk Nation’s connections to this area are both deep and unique and, as neighboring landowners, the Nation appropriately has a keen interest in the Department’s plans for management and use of Sauk Prairie Recreation Area.

In the face of the massive land use changes resulting from the construction, operation, and maintenance of the propellant plant, an inadvertent but positive ecological outcome emerged. With fire an annual threat even when the plant was idled, many parts of the facility were grazed and mowed to reduce fuel loads. Although they lacked the diversity of native prairies, these grasslands provided the right structure and habitat for many birds. As changing agricultural practices and conversions of farmland decimated populations of grassland birds throughout the Midwest, meadowlarks, bobolinks, bobwhite quail, dickcissels and others thrived at Badger. Like many other military installations around the country, the complex became a refuge for numerous rare species.

Landowners of the former Badger Army Ammunition Plant

<table>
<thead>
<tr>
<th>Landowner</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wisconsin DNR</td>
<td>3,385</td>
</tr>
<tr>
<td>Dairy Forage Research Center</td>
<td>2,105</td>
</tr>
<tr>
<td>Ho-Chunk Nation</td>
<td>1,553</td>
</tr>
<tr>
<td>Bluffview Sanitary District</td>
<td>163</td>
</tr>
<tr>
<td>Wisconsin DOT</td>
<td>80</td>
</tr>
<tr>
<td>Town of Sumpter</td>
<td>4</td>
</tr>
</tbody>
</table>
Executive Summary

For many current Wisconsin residents, Badger has been and remains the mysterious place on the “other side of the fence.” For decades, thousands of cars a day drove by the enormous industrial complex that represented the single largest and most visible expression of Wisconsin’s contribution to the WWII, Korea and Vietnam War efforts. Today, nearly all of the 1,400 buildings have been taken down, utilities lines, steam pipes, and railroads have been removed, countless tons of materials have been recycled, and contaminated sites have been remediated. Vast and imposing in its day, the infrastructure of Badger has been nearly eliminated from the landscape.

Although most of the physical vestiges of the site’s past – representing the lives of native peoples, the farms and community of the Euro-American settlers, and the industrial complex that supplied our national defense – are now largely gone, the human connections to this place remain.

The master plan

This master plan lays out the Department of Natural Resources’ proposal for the management and use of Sauk Prairie Recreation Area (SPRA). SPRA comprises about half of the former Badger Army Ammunition Plant (BAAP) and came to state ownership through the Federal Lands to Parks program following the formal decommissioning of the property. The Department’s ownership is not a contiguous block, but an irregular arrangement in two holdings. The Department will continue working with the other landowners of the former BAAP on a variety of common issues related to land management and public recreation.

Much is proposed in this master plan. To more easily present and implement the proposed recreation uses and habitat management strategies, the property is divided into seven management units based upon commonalities of their vegetation, past and future uses, and other factors. Each unit has a set of objectives and an associated group of strategies to achieve them.

What is proposed for recreation?

A blend of recreation activities that take advantage of the property’s attributes and features are proposed, including a variety of trails for hiking, biking, horseback riding, snowmobiling and snow shoeing. The Department’s goal is to provide high quality half-day or day-long experiences for a range of abilities. Being immediately adjacent to Devil’s Lake State Park, which receives over two million visitors a year, SPRA is well positioned to provide many activities that complement the camping, swimming, fishing, hiking, picnicking and other opportunities provided there.

Hunting and bird watching, as well as fishing along Lake Wisconsin at the old pump house, are expected to be very popular at SPRA. In addition, a 72-acre Class 2 dog training ground is proposed in the far southern portion of the property. Several day use areas – with shelters, picnic tables, grills, vault toilets, and educational kiosks – are also proposed. Building on the popularity of the model rocket launch site at Bong State Recreation Area in Kenosha County, the Department is proposing a small, 2-acre site at SPRA for clubs to launch sport rockets up to 10 days a year.

A key component of the recreational activities will be to incorporate the property’s human and natural history into visitor experiences through a variety of approaches. Fortunately, a local history group has assembled an impressive array of artifacts, pictures, and stories from the BAAP era. Few places in Wisconsin or the Midwest are as rich with cultural, historical, geologic, and ecological stories and the Department seeks to capitalize on this unique opportunity.

During the planning process the Department received many responses to the potential inclusion of ATVs (and motorized recreation in general) and a shooting range at SPRA; a large majority of the reaction was in opposition to
Executive Summary

both. Although it has long been a Department goal to provide more motorized recreation and shooting ranges in the southern part of the state, it is difficult to find places where these activities would not affect neighboring landowners or conflict with other public conservation lands users. After considerable deliberations, the DNR proposes to re-purpose many of the biking and equestrian trails and roads at SPRA for use by dual-sport motorcycles up to six days each year. The trails would be closed to other users during these days. No ATV riding area is proposed at SPRA.

Although no shooting range is proposed in this master plan, the Department recognizes the need to provide additional public shooting ranges in southern Wisconsin. As such, the Department will initiate a process to locate a shooting range in Sauk County, similar to the process recently used to site a new range in Columbia County. Department lands in the vicinity will be included in this evaluation. The public will have multiple opportunities to provide input in this process.

What is proposed for habitat management?

From a habitat perspective, Sauk Prairie Recreation Area can play a pivotal role in the regional conservation of grasslands and savannas and their constituent species. Of particular note here are two unique opportunities: (a) managing lands as part of an ecological continuum of habitats from the southern dry-mesic forest (in Devil’s Lake State Park) to oak woodland to oak opening to grassland, and (b) managing large blocks of grassland and oak opening habitats. Although there are other large blocks of grassland habitat in southern and central Wisconsin, this is likely the largest and most viable opportunity to restore and manage a large-scale forest to grassland transition.

The plan proposes that much of SPRA on the glacial moraine (generally east of the future Great Sauk Trail) be restored to oak opening, which was the dominant habitat present before settlement. In addition, a large part of the Rocket Area and part of the Magazine Area will be managed as open grassland. The Hillside Prairie, a high quality remnant that has long been the focus of local conservation efforts, is a priority to maintain and the master plan calls for the remnant to be expanded and connected with the larger grassland to the east.

Invasive species, particularly shrubs, have taken over large portions of SPRA and are the most pressing management challenge. The plan calls for a variety of techniques to address these plants, including grazing.

Are portions of the property still contaminated? What hazards remain?

The site’s use as an industrial facility that manufactured propellants resulted in contamination of some areas with chemicals and byproducts used in propellant manufacture, as well as asbestos, lead paint, PCBs and oil. Contaminants were found in buildings and storage areas and spread through the sewer system and ditches. Groundwater beneath the site is contaminated in three discrete plumes.

Featured recreation opportunities (proposed)

- Visitor center with display space.
- Hiking trails (10 miles)
- Biking trails:
  - Recreational, family-friendly (15 miles)
  - Mountain bike (5 miles in coordination with potential trails in Devil’s Lake State Park)
  - Great Sauk Trail (5 access points to SPRA)
- Equestrian trails (12 miles)
- All hunting seasons from mid-October to Feb. 15. Pheasant stocking.
- Trapping from Nov. 15 to Feb. 15.
- Day use area at the former reservoir site with an overlook deck, shelter and amphitheater.
- Horse trailer parking, corral, and loading area with picnic shelter and vault toilet.
- Day use area at Weigand’s Bay with accessible fishing platform or pier, carry-in boat access and picnic tables.
- Special event staging area with picnic shelter, vault toilets, grills, and a large grassy field.
- Rocketry site (up to 10 days/year).
- Lake Wisconsin overlook with shelter, picnic tables, grills and trailhead.
- Re-purposing trails and roads for use by dual-sport motorcycles (up to 6 days/year).
- Horse-drawn carts on the equestrian trails (up to 2 weekends/year).
- Snowmobile trail, either along the east side of the SPRA or on/alongside the Great Sauk Trail.
- A 72-acre Class 2 dog training area.
- Off-leash dog use in the Magazine Area.

Habitat management (proposed)

Grasslands........................................1,519 acres
Oak Openings ...................................1,647 acres
Oak Woodland.................................181 acres
Other .............................................38 acres
Executive Summary

The Army and its contractors undertook extensive remediation efforts to address these contamination issues. As a result, all lands within SPRA now meet the environmental thresholds for use as a recreation area. The Army continues to assess and test the groundwater and visitors will see monitoring wells (red pipes) throughout the property. The responsibility for maintaining the monitoring wells, landfills and capped areas remains permanently with the Army. The Army is also responsible for addressing any contamination resulting from its use of the BAAP property that may be found later.

What happens next?

Although SPRA opened to the public in April 2015, the property will be in a transition phase for many years to come. Other than trails on some of the former roads, currently there are no amenities for visitors. The Department proposes to place initial focus on continuing to clean up rubble and debris, securing the few remaining buildings, filling the worst of the potholes, placing boundary signs, and other tasks to ensure that visitors have a safe experience.

The Department is aware of strong interest in redeveloping two locations currently closed to the public: the reservoir site and the old pump house at Weigand’s Bay. The enormous reservoirs are a safety hazard and need to be razed and filled in. The pump house, which has been an eyesore for neighbors, is also a safety concern in its current condition. In addition, many other relics of the complex’s past need to be removed, including miles of deteriorating roads, numerous pipes and metal rods, and various utility structures and building foundations.

Unfortunately, the DNR does not have the funding to address these pressing needs. As a consequence, the agency will work with the Ho-Chunk Nation, Dairy Forage Research Center, Sauk County, local governments, and many conservation, recreation, and education groups with an interest in helping SPRA reach its potential. Of particular promise is the interest expressed by the Wisconsin Army National Guard to address some of the clean-up and development work at SPRA as part of their training exercises. The DNR is in ongoing discussions with the Guard on this front.

As with the recreation facilities, there is far more habitat restoration and management work to be done than the Department has the capacity to address over the next 15 years. Large areas of the property are dominated by invasive shrubs while other areas have been stripped of their topsoil. Some portions have been leveled, while others have been ditched. Non-native weeds are the primary vegetation in many places.

Initial management efforts will address the invasion of shrubs in areas that still provide some level of surrogate grassland and oak opening habitats and where prescribed fire remains an effective management technique. In some portions of the property, it is likely that other management approaches, such as aggressive brush cutting and grazing, will be needed before prescribed fire will succeed as a management technique. Another initial target will be to remove some of the pine plantations that fragment grasslands.

Many people who visit the property will want to better understand its history. Starting with the Ho-Chunk, followed by the early Euro-American settlers and farmers, and then the construction, operation, and eventual deconstruction and restoration of the BAAP, the property is one of Wisconsin’s most consequential places and its profound past is of interest to many – both to tell and to hear. The Department will rely on many others to help develop both the content and methods for telling the stories of this unique place.

The upcoming implementation phase for SPRA in many ways has its roots back in 2000 when the Sauk County Board of Supervisors established a locally-driven process to help shape the future of the former Badger Army Ammunition Plant. The Badger Reuse Committee, a 21-member group of representatives from neighboring communities, local, state, and federal governments, and the Ho-Chunk Nation, together forged a common vision, expounded through a set of values and criteria, “that can be meaningfully considered and realistically implemented by the appropriate local, state, and federal agencies.” The proposed use and management of SPRA described in the following pages is intended to help achieve significant portions of the vision for the former BAAP crafted fifteen years ago.
CHAPTER I: INTRODUCTION AND OVERVIEW

As the country’s entry into WWII grew imminent, the federal government established a series of production facilities across the country to support the war effort. The Sauk Prairie site was selected as a propellant manufacturing plant for many reasons, including: the land was fairly flat with good drainage, it was close to the Wisconsin River that could supply the enormous amounts of water needed, it was close to cities and villages that could provide an adequate labor force but far enough away for safety purposes, and it was supported by several local officials. The Badger Ordnance Works, as the plant was originally named, was one of 23 facilities in the country that produced explosives or propellants for WWII. At the time of its construction, Badger was the largest propellant manufacturing plant in the world; it produced over a billion pounds of smokeless gunpowder and rocket propellant for WWII and the Korean and Vietnam wars. The Army decommissioned the Badger Army Ammunition Plant (BAAP) in 1997.

The former BAAP property includes lands that were heavily disturbed and degraded during construction and operation, as well as other lands held in reserve, some of which remained in agricultural use over the entire life of the plant. Most of the farmland was transferred to the USDA Dairy Forage Research Center. Approximately 1,550 acres in the northwest section of the BAAP property are now owned by the Ho-Chunk Nation.

The DNR has received 3,087 acres of the BAAP property from the federal government (of the 3,385 acres it is expected to ultimately receive) for the establishment of the Sauk Prairie Recreation Area (SPRA). The DNR acquired the parcels that comprise SPRA through the Federal Lands to Parks program in a series of transactions starting in 2011. The DNR’s portion of the former BAAP is a mix of lands – many parcels were developed intensively, others sparsely. A portion in the northeast section of the property remained relatively undeveloped and was the focus of conservation efforts dating back decades; a small amount was continuously cropped. The property lies at the southern border of Devil’s Lake State Park, Wisconsin’s most popular state park, and is about halfway between Baraboo and Sauk City/Prairie du Sac.

The Johnstown Terminal Moraine, a low ridge that runs in a roughly north-south line down the middle of the BAAP property, marks the western edge of the great Laurentide Ice Sheet. Lands to the east of the terminal moraine are rolling with undulating topography, wet depressions, and a few ponds. Oak openings, with their scattered, open-grown oaks over grasses and forbs historically dominated much of this portion of the property. To the west of the terminal moraine, the outwash from the melting glacier formed a gently sloping plain of gravel, sand and silt over 100 feet thick. This was part of the great Sauk Prairie, a 14,000-acre tallgrass prairie that stretched from the ancient Baraboo Range to the sand barrens of the Lower Wisconsin River valley. At the northern edge of the BAAP property was oak woodland, a fire-maintained habitat with more densely grown trees on the rocky soils of the south face of the Baraboo Hills.

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3 Final approvals to transfer two parcels, M1 (the Settling Ponds area, 161 acres) and V1 (the main landfill, 137 acres), are still being processed.
Figure 4: Department of Natural Resources’ ownership at Sauk Prairie Recreation Area.
A. “User’s Guide” to this master plan

This master plan is arranged slightly differently than most, in large part to accommodate the wide range of people interested in the future plans for SPRA. The document begins with this introductory chapter, which explains the purpose of master plans, an overview of the planning process, guiding principles in developing the plan, and general descriptions of how the other landowners within the former BAAP are planning to manage their lands.

The bulk of the document is found in Chapter II, which lays out the proposed management, development and use of SPRA. In the first part of the chapter, the property vision and goals are described, along with some background information on legal authorities and classifications. Then, the proposed plan is presented in three ways:

The first section presents the proposed recreation opportunities by activity or issue. This section begins on page 17 and is intended to make it easier for readers interested in particular recreational activities and uses to see the overall scope of what is proposed at SPRA.

The second section presents the proposed land management prescriptions by general habitat type. This section begins on page 30. The same set of management prescriptions will be used to manage particular habitat types, regardless of where they occur on the property. For example, the suite of actions the Department will use to manage oak openings will be the same across the property. Thus, rather than repeat the descriptions of all the management actions that may be used for oak openings in each part of the property where they occur, they are presented just once here.

The third section presents the proposed recreation and habitat management plan by sections of the property. This part begins on page 46. To more easily and effectively present the proposed recreation uses and habitat management strategies, the property is divided into seven units, based upon commonalities of their vegetation, past and future uses, and other factors. Each unit (see Figure 7) has a set of objectives and an associated group of strategies to achieve them. For habitat management purposes, the units are subdivided into a total of 24 sub-units. Although the proposed management is presented here by units, SPRA will be managed as a whole, single entity. In addition, the DNR will continue to work with all the landowners to coordinate and collaborate on management issues across the entire former BAAP property.

The remainder of Chapter II addresses the proposed management of cultural and historical resources, infrastructure and facilities, general policies and real estate practices. Also included is a brief listing of potential research opportunities as well as descriptions of some of the initial priorities the Department hopes to address in the coming years.

Chapter III provides a brief overview of supporting information. Considerably more background information is available in the large number of assessment, inventory, and planning documents that have preceded this master plan. A reference list at the end of the document notes many of these background sources. Chapter IV presents an analysis of potential positive and negative impacts from the proposed plan. Chapter V describes the major alternatives that were considered, but not included. Finally, Chapter VI summarizes the public involvement process leading to this draft plan.
B. Purpose of master plans

Property master planning is a process that is used to determine how a property will be managed and developed. The development of master plans is governed by NR 44, Wis. Adm. Code. Master plans serve the following purposes:

- To manage the resources on Department properties according to their land use capabilities, consistent with the long-term protection and use of these resources, as required by NR 1.60(4), Wis. Adm. Code.
- To provide a sound basis for decision-making by Department staff, administrators, and the Natural Resources Board consistent with the Wisconsin Environmental Policy Act (WEPA).
- To integrate all appropriate Department programs and interests into the management and use decisions for the property.
- To provide clear and specific direction on the management, development and use of the property for property managers, administrators, and the interested public.
- To set a long-range vision and goals for the management and use of Department managed properties and associated public waters consistent with property capabilities and regional and statewide needs.
- To establish management objectives, priorities and prescriptions necessary to meet individual property goals.
- To give interested persons and other governmental units opportunities to provide input in how properties will be managed and used.
- To provide consistent, long-term management of properties regardless of personnel changes.
- To relate program input (e.g., money, staff, land acquisition, and facility development) to program output (e.g., resources protected or restored, recreational opportunities provided).
- To provide preliminary estimates and justification for the budget process to help ensure that funding is provided for developments specified in the master plan.

The following general principles were applied in developing this proposed master plan:

- Seek an appropriate blend of visitor experiences and habitat conservation in meeting the property vision and goals.
- Understand public ideas and perspectives on future uses.
- Be cognizant of the land's resource capability, the role of the property in its local and regional context, regional recreation supply shortages, applicable federal and state laws, Administrative and Manual Codes, DNR design standards, and the professional expertise of DNR managers.
- Strive to provide high quality experiences for the primary recreational uses.
- Seek to maximize large block management and minimize habitat fragmentation.
- Seek to protect and provide interpretation of the site’s significant cultural and historical resources.

C. Purpose of State Recreation Areas

State recreation areas are managed and administered by the State Parks program in accordance with Wis. Stat. s. 23.09. The primary purposes of recreation areas can be to provide multiple high quality outdoor recreation opportunities, provide regional or urban recreation opportunities, or for preservation of important resources. Unlike other property designations, formal “zones” can be incorporated within the property and the recreation uses and number of people using the zones may be limited. This provision is intended to be applied where the
Department believes it is necessary or appropriate to improve visitors’ experiences or minimize impacts to sensitive resources.

D. Property overview, history, significance, and restrictions on future use

As has been stated earlier, Sauk Prairie Recreation Area is one of the state’s most distinctive and exceptional holdings. The property is part of the former Badger Army Ammunition Plant and was transferred to the state from the federal government through the Federal Lands to Parks program. Its past use and historical importance are unlike any other property in the portfolio of public lands in Wisconsin.

SPRA is significant on many fronts. It offers the best opportunity in southern Wisconsin, if not the Midwest, to manage the continuum from a large forest block (in Devil’s Lake State Park) to oak woodlands to oak openings to large open grasslands. This natural gradient was once far more common on the landscape, but has been eliminated on a large scale. The property’s other significant ecological niche is the opportunity to manage large blocks of grassland and oak opening habitats and to coordinate with the HCN and DFRC on the management of their lands.

From a recreation perspective, the property is large enough to provide several different types of activities and is particularly well suited to provide trail-based opportunities that, at least initially, take advantage of the many miles of former roads. Although the roads are of varying quality and surfaces and tend to be straight, these characteristics are part of the site’s history and help tell the story of the property. Maybe most uniquely, the property also provides an opportunity to blend interpretation and education about the extraordinary human and natural history of the site with habitat restoration and recreational use.

E. Overview of the planning process and public participation

Although SPRA property is unique in many ways, the process used to develop this master plan generally followed the Department’s typical sequence of planning phases. The first phase focused on writing the Regional and Property Analysis (RPA), a synthesis of the attributes and features of SPRA and its broader context. Public input on the RPA was gathered in the summer of 2012. The RPA and public comments were then used to develop a draft vision, recreational and ecological goals, and three conceptual alternatives for SPRA. The Department went beyond its usual protocol and presented these to the public for their review and comment. Public comments on the draft vision, recreational and ecological goals, and three conceptual alternatives were gathered in the summer of 2013 and summarized in a
document released in November 2013. These documents, along with previous documents related to the use and management of the BAAP (e.g., the Badger Reuse Plan), and all the public input were then used to develop this draft master plan.

F. Opportunities in the SPRA planning process

In developing the master plan for SPRA, Department staff took advantage of the following unique opportunities:

- Extensive background material.
  
  The Badger Reuse Plan, the DNR’s Federal Lands to Parks program application to the NPS, community discussions and dialog, inventories, and other planning documents are a strong foundation from which to build the draft master plan. The BAAP property has a long history of assessment and community evaluation that informs the current planning process (see Reference List).

- Continuum of habitats.
  
  SPRA offers a unique opportunity to manage a continuum of habitats, from forest to savanna to grassland, on a large scale.

- Adjacency to Devil’s Lake State Park.
  
  SPRA’s connection with DLSP, the most visited as well as the largest state park in Wisconsin, provides the opportunity to maximize recreation and habitat outcomes.

- Unique history of SPRA.
  
  The many facets of the property’s past can be incorporated into visitor experiences through a variety of education and interpretation tools. The property has many stories to tell and provides a unique opportunity to connect visitors to many geologic, environmental, social, and historical issues of our state’s past and present.

- Conservation farming.
  
  SPRA provides an opportunity to integrate conservation farming practices, particularly grazing and late hay cutting, as tools to restore and manage grassland and savanna habitats.

G. Management of other lands within the former Badger Army Ammunition Plant

The Army has transferred, or is in the process of transferring, the former BAAP property to the following owners: DOT (60 acres), Bluffview Sanitary District (164 acres), DFRC (2,105), HCN (1,553 acres), Town of Sumpter (3.6 acres) and the DNR (3,385 acres). These landowners’ plans for their respective properties are briefly summarized here.

1. HO-CHUNK NATION

In December 2014, after over a decade of effort, Senator Baldwin announced the transfer of 1,553 acres from the federal government to the Ho-Chunk Nation through a provision in the National Defense Authorization Act.

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4 The Final Report on the Work of the Badger Reuse Committee, including Values, Criteria and Concept Map Plan for the Reuse of the Badger Army Ammunition Plant Property (commonly referred to as the “Badger Reuse Plan”) is available on the Sauk County Department of Planning and Zoning website.
In October 2014, the Ho-Chunk Nation revised a management plan for their portion of the BAAP. The plan notes the BAAP land has very important historic and cultural significance to the Ho-Chunk people as it lies within the Ho-Chunk’s aboriginal territory and includes a number of historic and pre-historic sites of significance to Native people. As stated in their management plan, the HCN lands at BAAP will be managed for the following goals:

- Protect the aesthetic, cultural, scenic and wild qualities as well as the native wildlife and plant communities. Special emphasis will be placed on designated federal and state-listed species, species of special concern, and other unique biotic features.
- Protect, conserve, and maintain all significant cultural sites.
- Provide for and manage the use and enjoyment by visitors and maintain a diversity of low-impact recreational opportunities for people of all abilities.
- Utilize sound natural resource and agriculture management practices to improve water quality, maintain soil productivity, and protect wildlife habitat.
- Develop a bison program to support HCN nutritional programs and provide educational opportunities.
- Strive to operate a self-supporting project through grants, donations, bequests, and fee-based recreation that is consistent with the overriding commitment to preserve Badger’s natural, historical and cultural features.
- Ultimately, establish and maintain a visitor’s center that includes information and exhibits on Badger’s geologic and natural uniqueness, bison management, cultural significance and history of the ammunition plant. The center would also provide information and exhibits on the history of Native Americans and Euro-American habitation of the Sauk Prairie as well as an educational classroom.

2. DAIRY FORAGE RESEARCH CENTER

DFRC, another primary landowner of the former BAAP property, has as its mission, “…to develop and apply science that enhances the use of forages by dairy cattle.” Research activities undertaken at DFRC focus on: improving dairy forage and manure management to reduce environmental risk; understanding how dairy cows digest and utilize forages; improving forages so they are better used by dairy cattle; improving methods of harvesting and storing forages; and studying the impact of dairy systems on the environment to help dairy farmers know the best ways to protect the environment and efficiently recycle the nutrients in manure.

In 1980, the DFRC obtained a special permit through the Army to farm about 1,500 acres of cropland and pastureland that were part of the BAAP. In 2004, the USDA received custody of 1,943 acres of the BAAP to be used by DFRC. The active portion of the DFRC complex is now comprised of 2,006 acres, which are planted in a
rotation of crops including corn for grain and silage, alfalfa, soybeans, winter wheat, and red clover. Approximately 40 acres are used for small research plots and 235 acres are used for pasture. The remaining acres consist of buildings, roads, and woodlots. The current herd size consists of about 350 cows, and 350 calves and heifers.

To better enable the DFRC to conduct research designed to find solutions to problems associated with the economic and environmental sustainability of dairy farms, the DFRC is currently developing options for enhancing the research capacity of its farm. After reviewing several options, the Center is planning to build a new research complex near the former Conservation Club site that can house approximately 450 cows. An environmental assessment was completed for the proposed project in 2011 and concluded that a new complex would have fewer individual and reduced cumulative adverse environmental impacts than using the existing facility. Future construction of the proposed facility is dependent on the availability of funding.

3. BLUFFVIEW SANITARY DISTRICT

Approximately 163 acres along the southwestern portion of the BAAP were transferred to the Bluffview Sanitary District for their wastewater treatment facilities. In addition, a one-acre parcel near USH 12 houses a drinking water well.

4. DEPARTMENT OF TRANSPORTATION

The 60 acres of land transferred to DOT were used in the realignment and reconstruction of STH 78 along the southeastern portion of the BAAP.

5. TOWN OF SUMPTER

The Town of Sumpter plans to receive ownership of the parcels encompassing the two cemeteries (Pioneer - 2.6 acres, Thoelke – 1.0 acre) and a small burial site (Miller site). The Town will maintain these sites for public visitation.

6. GREAT SAUK TRAIL EASEMENT

The Wisconsin Department of Transportation (DOT) purchased a permanent easement from the Army/GSA on the railroad corridor from the south end of the BAAP property to Goette Road. The DOT and the Wisconsin River Rail Transit Commission subsequently entered into an interim trail use agreement with the DNR allowing for use of the corridor as part of the DNR’s rail-trail network. This segment would potentially be part of the Great Sauk Trail, which is planned to run from Sauk City to near Devil’s Lake State Park. Ultimately the Great Sauk Trail (GST) may extend from Middleton to Reedsburg, where it could connect to the 400 State Trail. Sauk County has taken the lead in developing a recreational use, management, and operation plan for the Great Sauk Trail.
CHAPTER II: PROPOSED MANAGEMENT, DEVELOPMENT, and USE of SAUK PRAIRIE RECREATION AREA

A. Introduction

1. PROPERTY DESIGNATION AND AUTHORITY

The scope of use and management of a state property is governed by its official designation. The authority to acquire and manage land within Sauk Prairie Recreation Area is described in Wis. Stat. s. 23.09, 23.11, 23.14, and 27.01. This state recreation area is administered by the Bureau of Parks and Recreation. The NRB approved the establishment of Sauk Prairie Recreation Area, the acreage goal, and the project boundary\(^5\) in December, 2002.

The Department proposes to adjust the SPRA project boundary to remove the Ho-Chunk Nation’s lands from the existing boundary. When the initial project boundary was established in 2002, it was unclear which lands would be transferred to the Ho-Chunk Nation and which might come to the Department. This issue has now been resolved and in recognition that the Ho-Chunk Nation is a sovereign nation the Department is proposing to remove their 1,553 acres from the SPRA project boundary.

The Department purchased a 3.5 acre parcel on Weigand’s Bay under the authority of the Statewide Fisheries Habitat program. The parcel is located between where the former pump house was located and land owned by the Town of Merrimac. As part of this master plan, this 3.5 acre parcel will be re-designated to be part of Sauk Prairie Recreation Area.

DNR acreage goal: 3,800 acres

Existing DNR project boundary size: 7,314 acres\(^6\)

Proposed DNR project boundary size: 5,761 acres

State ownership acreage:

- Current fee ownership: 3,087 acres
- Projected fee ownership at final transfer from NPS: 3,385 acres
- Leased lands (rail-trail corridor): 136 acres (includes some land outside of the original BAAP boundary)

2. PROPERTY VISION

Sauk Prairie Recreation Area, in cooperation with other lands of the former Badger Army Ammunition Plant and in coordination with other protected lands of the Baraboo Hills, provides exceptional recreation experiences that are well-suited to, and take advantage of, the site’s unique resources, location, and history. The Department of Natural Resources and partners capitalize on opportunities to protect, restore, showcase, and study significant

\(^{5}\) The DNR refers to its properties as “projects.” Project boundaries, which are approved by the Natural Resources Board and the Governor’s Office, simply establish the area within which the Department is authorized to acquire land. Within a project boundary, the Department is authorized to acquire up to a certain amount of land (the “acreage goal”), which in this case is 3,800 acres.

\(^{6}\) Earlier DNR documents stated the SPRA project boundary encompassed 7,354 acres. The figure presented here (7,314 acres) is based on more accurate GIS mapping.
natural ecosystems, cultural resources, and historic features to the benefit of visitors, local communities, and the state. A continuum of habitats – from forests to savannas to prairies – is restored and managed across the property and support a diverse assemblage of native species, particularly those that require large blocks of habitat, as well as a variety of recreational activities.

In sum, the SPRA property provides a set of recreational, ecological, cultural, social, and economic benefits within the capabilities of its resources that are: compatible with and complementary to the overall resource and recreation management in the Baraboo Hills and on neighboring properties in the BAAP, connected to surrounding communities, and reflective of the unique character and history of the property.

3. PROPERTY GOALS

   a. Recreation

   Provide settings and facilities for a diversity of outdoor recreation opportunities, focusing on activities for which SPRA’s features, resources, location, and size enable particularly high-quality visitor experiences. Focus on recreational activities in high demand regionally and for which SPRA provides a potentially unique opportunity for visitors. Select, site, and manage recreational uses so as to minimize impacts and conflicts with other visitors, the neighboring community, and the environment. Incorporate the property’s unique human and natural history into visitor experiences. To the degree practical, provide recreational access and opportunities to visitors with a range of abilities. Ensure the safety of all visitors.

   b. Ecological management

   Restore and enhance the ecological transition from the forests of the Baraboo Hills to oak woodlands to oak openings to open prairies. Provide significant grassland and oak opening habitats to support rare and declining plants and animals, particularly bird populations. Promote quality habitat for desirable game and non-game species. Evaluate, research, and demonstrate habitat management techniques (such as conservation farming practices), with a focus on strategies that reduce invasive species and their impacts.

   c. Cultural resource preservation

   Identify, preserve, and showcase significant sites that contribute to the property's storyline from geological history, Native American life, Euro-American settlement, the design, operation and decommissioning of the Badger Army Ammunitions Plant, and its transition to a site for outdoor recreation opportunities, native habitats, cultural interpretation, and research.

   d. Education and interpretation

   Provide interpretive and educational opportunities focusing upon natural and human history, habitat restoration and conservation efforts, and the impacts of human use of the Badger Army Ammunition Plant. Utilize a range of interpretive techniques including kiosks, signage, and web-based systems that allow visitors to use smartphones, tablets and other mobile devices to view pictures and videos, read accounts and descriptions, and hear sounds related to the property. In cooperation and collaboration with a range of partners including local citizens, business and community interests, elected officials, and history, conservation, and education groups, build and operate a visitor center which hosts interpretive displays that tell the many stories of the property.
4. FUTURE INVOLVEMENT OF THE U.S. ARMY AND THE WISCONSIN ARMY NATIONAL GUARD AT THE FORMER BAAP

As described in the deeds transferring ownership, the Army has permanent responsibility to address contamination and safety issues related to the construction, operation, and deconstruction of the plant. As such, it has an ongoing need to have access to SPRA to assess and monitor any known issues and to address future issues if they arise. As an example, the Army is responsible for maintaining the landfills and their associated effluent collection and treatment systems in perpetuity.

The Wisconsin Army National Guard has used the BAAP site for limited training exercises for many years. Recently, the Guard has been conducting a variety of helicopter exercises including landings, moving a weighted barrel that mimics supply drops, and flight patterns at the former BAAP property. These exercises typically are conducted during the week, often in the evenings or at night. The Wisconsin Army National Guard has requested to use portions of SPRA for continued limited training opportunities. The Department intends to accommodate the Guard’s training needs on SPRA to the extent that they do not compromise the primary purposes of the property. The Department and Guard are in on-going discussions on potential future uses, including possibly developing a landing zone within the fenced portion of the main landfill. The Department will authorize any future Guard use of SPRA through formal use agreements.

5. CLASSIFICATIONS

a. Land Management classifications

As stated previously, a property’s “designation” sets the overall scope for its use and management. In addition, Department lands are assigned a management “classification” that further clarifies the primary uses and objectives. There are seven land management classifications that are applied to Department lands.7

Of course, the vast majority of Department properties meet multiple conservation and recreation objectives. For example, an area classified as a Habitat Management Area can offer a range of recreation opportunities ranging from hunting to biking. Similarly, lands classified as Recreation Management Areas will often be managed to provide multiple habitat benefits in addition to providing camping, horseback riding, and other developed recreation settings. In sum, land management classifications represent a primary use, but a wide range of conservation and recreation outcomes are possible.

Each part of a DNR property is assigned only one land management classification. For example, lands cannot be classified both as a Forest Production Area and a Recreation Management Area. However, a property may have one or more management units, potentially comprised of sub-units, each with a land management classification. All of the management units at a property may have the same land management classification or there may be different classifications for different parts of the property. Although not common, lands within a management unit could have one or more land management classifications.

All lands covered under this master plan are proposed to fall into one of the following land management classifications:

7 See NR44.06, Wis. Adm. Code for descriptions of the land management classifications.
Habitat Management Areas are managed to provide or enhance habitat, whether upland, wetland or aquatic, to support specific species of plants and animals and/or native communities. A master plan may authorize any management activity or technique that is consistent with the management objective specified in the master plan for the area, and is compatible with the site’s ecological capability. Examples of potential management activities include timber harvest, mowing, burning, herbicide application, planting, flooding, agricultural cropping, grazing and browsing, installation of fish habitat improvement devices, road construction and erosion control.

Native Community Management Areas are managed to represent, restore and perpetuate native plant and animal communities, whether upland, wetland or aquatic, and other aspects of native biological diversity.

Special Management Areas are managed to provide and maintain areas and facilities for special uses not included under other land management classifications. These can include administrative sites and areas closed to public access.

Recreation Management Areas are managed to provide and maintain land and water areas and facilities for outdoor public recreation or education.

Recreational Use Setting Sub-classifications: There are four sub-classes within Recreation Management Areas that further describe the general recreational setting or “feel” of the area – that is, the level of remoteness, intensity of interactions with other visitors, ease of access, and level of development of recreation facilities. Type 1 Settings are the least developed and provide a remote setting where visitors can experience solitude and independence. Only a limited amount of Department land is classified as Type 1, with most being large wilderness areas in the north. At the other end of the spectrum are Type 4 Settings, which may provide for intensive recreational opportunities and be the most developed (e.g., facilities that provide a high level of comfort for visitors, convenience, and environmental protection). Lands within SPRA are proposed to be primarily Type 3 sub-classifications.

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<th>Special Management Area</th>
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CHAPTER II: Management, development, and use

b. Road classifications

The Department constructs and maintains roads to different standards based on their intended use, anticipated level of use, and land management classification. Roads classifications are described in NR 44.07, Wis. Adm. Code. Roads within SPRA will be maintained as lightly to moderately developed, which are defined as follows:

**Lightly developed road.**

A lightly developed road shall be a temporary road, a permanent seasonal road or a permanent all-season road which is primarily a single lane with a maximum sustained cleared width normally not exceeding 16 feet, is lightly to well-graded with minimal cut and fill, is surfaced with primitive, native or aggregate materials except in limited special use situations where asphalt may be used, and has a maximum speed design of 15 mph. Due to the variability of roadbed conditions at different times and places, some lightly developed roads might not be negotiable by ordinary highway vehicles.

**Moderately developed road.**

A moderately developed road shall be a permanent seasonal road or a permanent all-season road which typically is 2-lane, but may be one-lane, have a maximum sustained cleared width normally not exceeding 45 feet for 2-lane and 30 feet for one-lane, a well-graded roadbed and may have moderate cuts and fills and shallow ditching, has a surface of aggregate, asphalt or native material, and a maximum design speed of 25 mph.

c. Trail classifications

The Department constructs and maintains trails to different standards based on their intended use, anticipated level of use, and land management classification. Trails within SPRA will be a range from primitive to fully-developed. Trails are described in NR 44.07, Wis. Adm. Code as follows:

**Primitive trail.**

A primitive trail shall be a minimally developed single-file trail with a maximum sustained cleared width normally not exceeding 8 feet and a minimal tread width for the intended use, have a rough, ungraded bed where large rocks, stumps and downed logs may be present. It primarily follows the natural topography, has no or few shallow cuts and fills, and is surfaced with primitive or native materials, except for limited distances where environmental conditions require the use of other materials. Modifications to the natural trail surface are limited to that which is minimally necessary to provide essential environmental protection.

**Lightly developed trail.**

A lightly developed trail shall be a trail with a maximum sustained cleared width normally not exceeding 16 feet, a moderately wide tread width for the designated uses, a rough-graded base to remove stumps and large rocks, and a surface of primitive or native materials, except where other materials are required due to environmental conditions or where the trail also serves as a lightly developed road where other types of surfacing materials are used.

**Moderately developed trail.**

A moderately developed trail shall be a trail with a maximum sustained cleared width normally not exceeding 8 feet, a minimal tread width for the intended use, a relatively smooth graded base with a compacted surface
composed of stable materials such as aggregate. Where practicable and feasible, a moderately developed trail shall, at a minimum, meet the standards for recreational trails accessible to persons with a disability.

**Fully developed trail.**

A fully developed trail shall be a trail with a smoothly graded base and a stable, hard surface composed of materials such as asphalt, aggregate or frozen earth. The trail's cleared width, tread width and cuts and fills are not limited, but shall be appropriate for the trail's intended use. To the degree practicable and feasible, fully developed pedestrian trails shall be fully accessible by persons with physical disabilities.

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Figure 6: The reservoir construction site with the concrete sides poured, looking east. The Baraboo Hills slope up to the left. The buildings in the upper right are part of the TNT Acid area.
B. Proposed recreation and habitat management

From a recreation perspective, with its large size and close proximity to population centers, Sauk Prairie Recreation Area can meet many local and regional recreation demands. Although the property is a former industrial site, has experienced dramatic disturbances, and has a significant invasive species problem, SPRA is a substantial block of open space that can support a range of recreation activities. Regionally, there is a high demand for many types of recreation that the property could potentially support, including trails (hiking, biking and horseback riding), water access and carry-in boat launches, walk-in camping, dog parks, picnic areas and nature centers. In addition, the Department consistently receives requests for opportunities to pursue other activities, such as shooting ranges and off-road driving of motorized vehicles (ATVs and motor bikes), in southern Wisconsin.

SPRA could provide many of these recreation opportunities. However, the Department’s desire is to provide high quality experiences and to focus on those activities for which the site is particularly well suited, not to include all possible recreational opportunities. As a consequence, the Department recognizes that the proposed management plan will help meet some significant recreational demands but won’t address other important needs.

As with all properties, the Department seeks to integrate recreation facilities and uses in ways that balance with the protection and management of other resources. SPRA is unique in the significant human history of the site and its habitat restoration potential; the proposed plan seeks to incorporate and be sensitive to these resources and opportunities.

From a habitat perspective, Sauk Prairie Recreation Area can play a pivotal role in the regional conservation of grasslands and savannas and their constituent species. Of particular note here are two unique opportunities: (a) managing lands as part of an ecological continuum of habitats from the southern dry-mesic forest (in Devil’s Lake State Park) to oak woodland to oak opening to grassland, and (b) managing large blocks of grassland and oak opening habitats. Although there are other large blocks of grassland habitat in southern and central Wisconsin, this is likely the largest and most viable opportunity to restore and manage a large-scale forest to grassland transition.

The need and opportunity for partnerships.

Many trails, picnic areas, interpretive sites, and other facilities to help create high quality visitor experiences are proposed here. Given current budget constraints, the Department will need to continue to develop partnerships with conservation and recreation organizations, local businesses and clubs, government agencies, and other groups to help construct and operate the numerous proposed recreation facilities. And the interpretive opportunities will require a close working relationship with the Badger History Group, the Ho-Chunk Nation, the local farm community, and others.

Similarly, given the size of the property and the scope of the task of restoring and managing habitats, it will be to the DNR’s benefit to develop diverse partnerships to achieve the needed habitat management at the SPRA. Addressing the infestation of invasive shrubs and weedy trees will likely be a decades-long process. As such, the SPRA (and the larger BAAP property) offers a unique opportunity to work with partners in the farming and restoration communities to incorporate and research different approaches to managing invasive shrubs and trees that plague much of southern Wisconsin (and the Midwest). Portions of the property may be well-suited to integrate and study the ability of different grazing systems (in concert with mowing and prescribed fire and potentially other techniques) to effectively reduce shrubs, weedy trees, and various invasive plants.

The SPRA holds great potential to be a unique and popular destination that merges recreation, conservation, and education about the profound history of the site. The Department looks forward to working with a wide variety of partners to move the envisioned recreation area to reality.

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8. See page 5-22 of *The 2005-2010 Wisconsin Statewide Comprehensive Outdoor Recreation Plan*. 
Habitat management issues abound at SPRA. Since the construction of the ammunition-producing facilities at BAAP, fire was an annual threat on the property, even during the periods when the plant was idle and after the facility was formally decommissioned. To reduce the amount of fuel (flammable vegetation), large portions of the property where buildings were present were either mowed or grazed using cattle from local farms. These actions helped maintain the short-stature vegetation around the buildings, dramatically reduced the presence of shrubs, and supported a wide diversity of grassland bird species. At the Army’s request, in the 1990s DNR staff periodically conducted prescribed burns in the northeastern portion of the property where there weren’t any buildings. Most prescribed fires were discontinued following the terrorist attacks in 2001 as a security precaution.

When the Army shifted from a “maintenance mode” to the decommissioning phase in 1997, it began the long process of removing buildings and other structures, remediating contaminated sites, re-grading areas, and countless other tasks. During this phase, most mowing was discontinued and cattle were removed for safety reasons. An unintended consequence was that shrubs and weedy trees quickly invaded many grassland areas and have become the major habitat management concern facing the DNR.

The Department has had preliminary discussions with scientists and land managers at the DFRC, University of Wisconsin system, DATCP, and other organizations, as well as goat and cattle graziers regarding using grazing as a technique to restore and manage habitats at SPRA. The Department proposes to continue these discussions and develop an overall plan to incorporate and assess different grazing systems at SPRA as habitat management tools, while providing public recreation opportunities. This “grazing plan” could also include lands at the BAAP owned by DFRC, HCN, and BVSD, if acceptable to those landowners. An important component of this “conservation farming laboratory” approach will be to apply what is learned to other public and private lands in the state.

Given its size and unique history, SPRA will require significant effort by the Department and its partners to reach its recreation and conservation potential. It will also require flexibility in implementation - taking advantage of opportunities as they emerge, responding to future issues and challenges, and applying what is learned in an iterative process. As such, by design this master plan lays out a proposed framework for future management and use of the property, but places essential discretion in the hands of the property manager to determine the details of where, when, and how different aspects of the plan will be implemented.

As stated in the “Users’ Guide” section, the remaining part of this chapter forms the bulk of the document. The first part describes the proposed recreational opportunities and facilities, the second part lays out the proposed plan by the different management units and sub-units, and the final part presents the habitat management prescriptions.
1. PROPOSED RECREATION USES AND FACILITIES, BY ACTIVITY

This section describes the proposed recreation opportunities for the property (see Maps E, F and G, as well as Figure 1). The intent of this compilation is to make it easier for readers to consider the Department’s proposal for recreation activities of interest for SPRA as a whole. For many of the activities listed here, additional information can be found in the section that describes the proposed management by unit (starting on page 46).

It will likely take many decades to fully develop the recreation facilities and opportunities described here. Initially, this plan calls for using some of the former roads as trails for biking, horseback riding, cross country skiing (ungroomed), snowshoeing, and hiking. Over time, new trails will be constructed and many of the former roads will be removed. In some cases, the road beds may be used in trail construction, but the trail thread will be narrowed to provide more pleasant experiences.

The plan calls for re-purposing some of the biking and horseback riding trails (when they are simply the former roads and when they are the newly constructed trails) for riding dual-sport motorcycles up to six days a year (see page 19 for details). During these times, the trails will be closed by signage to all other uses. In addition, up to two weekends a year the former roads that will be used for biking and horseback riding will be opened to horse-drawn carts and buggies (see page 21 for details). The trails will remain open for biking and horseback riding during these weekends and signs will be placed alerting bikers and horseback riders of the use of carts. After the construction of new horseback riding trails, this master plan authorizes the Department to allow horse-drawn carts and buggies on these trails.

a. General use and fees

The five statutorily defined nature-based outdoor recreation activities – hunting, trapping, fishing, hiking, and cross country skiing – will all be authorized at SPRA, with some restrictions that are described in the following pages.

The property will be open from 6:00 AM until 11:00 PM. Hunters may access the property one hour before legal hunting hours begin. A state park admission fee (state park pass) will be required starting in 2016.9 As per NR 45.12(3), pedestrians and snowmobile riders will not need a state trail pass to use designated trails. All other users of designated trails at the property will need a state trails pass. Bikers, horseback riders and other vehicles10 do not need a state trail pass when only riding on or using roads open to highway licensed vehicles.

All new facilities, including trails, will be constructed following the DNR’s Design Standards Handbook.

The property manager may, by posted notice, close the property or portions of the property to address construction, deconstruction, or remediation activities, to accommodate farming or grazing operations, or for other reasons as needed.

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9 The Department will pursue a change to NR 45.12 adding the SPRA to the list of properties for which a state park admission fee is required.

10 State statute 340.01(74) states that “vehicle” means every device in, upon, or by which any person or property is or may be transported or drawn upon a highway, except railroad trains. A snowmobile, an all–terrain vehicle, and an electric personal assistive mobility device shall not be considered a vehicle except for purposes made specifically applicable by statute.
b. **Motorized access**¹¹

**Objectives:**

- Provide a modest amount of public vehicle access to the property, focusing on enabling access to sites likely to be most popular and that provide the most significant interpretive opportunities.
- Provide access for types of motorized recreational vehicles in places and time periods that create high-quality experiences, that are consistent with the property vision and goals, and do not significantly impact other visitors to the property.
- Provide access for people using power driven mobility devices (PDMDs), such that their experiences are, to the degree feasible, similar to those who do not use PDMDs.
- Provide access for the Army and their contractors to the landfills, capped areas, and groundwater monitoring wells.¹² Provide access to the Bluffview Sanitary District to their well house in the west end of the Gateway Corridor and to the Town of Sumpter for maintaining the Thoelke Cemetery.
- Provide service roads (closed to regular public vehicle use) that ensure staff can effectively and efficiently manage SPRA.

**Proposed management:**

**CARS AND OTHER VEHICLES LICENSED FOR HIGHWAY USE**

There will be one public entrance to the property, which will be located at the main gate on USH 12. Approximately 15 miles of roads are proposed to be permanently maintained to provide public vehicle access. Currently these roads have different surfaces and are in varying condition; the long term goal is for most of these roads to be moderately-developed and paved. A small amount of new road may be constructed to address access needs. All roads open to the public in SPRA will have a posted speed limit of 25 mph.

The surface and management of border roads will be determined through discussions with the HCN and DFRC.¹³ In addition, the Department will continue to work with the HCN and DFRC to identify a permanent entrance road corridor from USH 12 to provide access to the site of the future visitor center and into the main part of the property. Similarly, the Department will also work with the DFRC to identify best long-term options to provide public vehicle and trail access across their property and into the Magazine Area.

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¹¹ Wis. Stats. s. 23.116 was enacted in 2013 requiring the Department to map all roads located on DNR lands and to work with the public, other units of government and interested parties to identify which roads should be open to motorized vehicles. The RPA for this master planning process was released to the public prior to the enactment of the law. As such, the DNR will use the public comment period for the draft master plan as the forum by which it works with the public and others to craft an appropriate motorized access plan. This draft master plan proposes a motorized access component consistent with the law.

¹² The DNR is required to provide motorized access to the Army and their contractors to sample and maintain monitoring wells. Sampling typically takes place from March through November and, depending on the well, is done quarterly, semiannually, annually or biennially. A map of active wells (Map M) is found at the end of this document. It is likely that some of these wells will be formally closed in the future.

¹³ Many of the borders between the SPRA and lands owned by the HCN and DFRC are along roads. The deeds that transferred these lands to the DNR state that both parties retain non-exclusive use of these shared roads. That is, both the DNR (and thus the public where roads are open) and either the HCN or DFRC may use the entire road, not just their “half” to the centerline.
The road up to the overlook at the former reservoir site will be closed until the reservoirs are drained and possibly filled with material. Once open, the road will be restricted to one-way traffic in an effort to minimize traffic problems due to its narrowness.

When the visitor center is built, the road from USH 12 to that facility will be plowed. Other roads in SPRA will not be plowed in winter. Until parking lots are constructed, unimproved parking areas will be marked. Parking along the shoulders of some roads may be restricted.

The Department will maintain approximately seven miles of former roads for management access. These roads will be closed to the public (except by special permit) and will be classified as lightly or moderately developed roads. About 4.5 miles of these roads are jointly owned with DFRC.

**DUAL-SPORT MOTORCYCLES**

There is growing demand to provide opportunities for dual-sport motorcycle riding. Dual-sport motorcycles are designed to be both legally driven on public roads and to be ridden on off-road trails. Minnesota has incorporated opportunities for dual-sport motorcycles on some of their public properties by periodically re-purposing non-motorized trails for their use. This proposal is in part modeled after their approach.

This master plan proposes to open, for up to six days a year (but no more than three consecutive days), many biking trails, horseback riding trails, and roads for dual-sport motorcycle riding events. The trails and roads open to motorcycles during these special events will be determined by the property manager in consultation with motorcycle riding clubs and will be based on surface, slope, width, and other factors. Trails and roads selected will include those best suited to providing high quality riding experiences with the least impact to the long-term functionality of the trails and roads. Motorcycle use will not be allowed on the Great Sauk Trail.

All motorcycles and riders using the property during these special events shall meet the requirements established in NR 45.05(S), Wis. Adm. Code, including having a valid state trail pass.  

Motorcycle riding clubs will need to apply for and receive a special use permit for these events. The permit will require the clubs to satisfactorily repair any damage to the trails or roads. Following these events, the property manager and club will evaluate the outcomes and identify opportunities to improve experiences for the riders and minimize impacts to the trails and roads in potential future events.

The trails and roads selected for these special events would be closed to all other uses during these periods. The six days for motorcycle use would be determined by the property manager and timed to ensure the trails and roads are dry enough to support motorcycle use and to avoid other scheduled events or periods when the Department expects significant uses of the property. The days that trails will be used for motorcycle use will be public noticed.

**POWER-DRIVEN MOBILITY DEVICES (PDMD)**

Since 1990, DNR has maintained a permit system to allow individuals with disabilities to use motorized vehicles and devices on DNR lands as a mode of personal conveyance. Permits for the use of PDMDs are

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14 Chapter 45.05(S) addresses safety, age, and noise issues related to off-highway motorcycles and dual-sport motorcycles on Department lands.
issued by property managers and based on individual requests and property conditions. Use of PDMDs may be limited in operation (e.g., speed limit) or location to ensure visitor safety, environmental protection, or to minimize impacts to visitors that do not require PDMDs. PDMDs may potentially be used on trails, roads open to the public, and staff service roads.

**SNOWMOBILES**

Consistent with other DNR properties, SPRA will provide a snowmobile trail that connects trails that are part of a larger regional network. To meet this need, a snowmobiling trail from the southern edge of the property up to Burma Road (where an existing snowmobile trail heads into DLSP) will be developed. This trail may be on or alongside the main north-south rail corridor (where the GST is planned) or primarily along the eastern perimeter fence corridor. The final location will be determined based on the final GST plan and by the property manager in consultation with the local snowmobile club.

c. **Designated trails (non-motorized)**

**Objectives:**

- Provide opportunities for high-quality trail experiences that are compatible with other recreation activities.
- Provide trail-based experiences that could last up to a full day for biking, horseback riding and hiking.
- Provide opportunities for trail linkages to DLSP and, via the Great Sauk Trail, to nearby communities and other regional trail networks.
- Incorporate interpretive and educational opportunities into the trail network.
- Generally, provide separate trail networks for different users in order to minimize conflicts and provide high-quality experiences. Combine trail uses as appropriate to minimize habitat impacts and achieve construction and management cost savings.
- Provide the Army or their contractors with temporary vehicle access to well monitoring sites, as needed, on the biking or equestrian trails.

**Proposed management:**

**HIKING**

One longer-distance designated hiking trail, up to five miles, is proposed to run from the future visitor center site up to the overlook at the former reservoir site. The trail will be designed and constructed as a primitive or lightly-developed trail. In addition, a potential trail connection from the overlook into DLSP is authorized in this master plan, but will not be constructed unless authorized in an update to the DLSP master plan.

In addition to this longer distance trail, a series of short loop trails may also be constructed throughout SPRA that would focus on providing interpretation and education about the property. The location, length, and features of these loop trails will be determined by the property manager and will be based on visitor interest, property attributes and opportunities, availability of funding, and other factors. A short loop trail with interpretive displays will be developed at the visitor center.

An example of a loop trail in the Magazine Area could string together the Thoelke Cemetery, one of the last remaining magazine buildings (on DFRC land), oak opening restoration work, and the Henry and Steidtman homesteads.
Loop trails will be primitive to moderately-developed trails and to the degree feasible, some will be designed and constructed for use by mobility impaired people. An additional five miles of primitive to moderately-developed loop trails are authorized in this master plan. In addition to these trails, hiking is allowed on all roads and biking, horseback riding, cross-country skiing (if they are ungroomed), and snowshoeing trails and the Great Sauk Trail.

**BIKING**

In addition to the Great Sauk Trail, up to 15 miles of “family friendly” designated recreational bike trails are proposed. These trails, primarily to be composed of crushed and compacted limestone screenings, will generally be 8’ to 10’ wide. The trails will wind through the entire property and be positioned to pass by interpretive sites to the degree practical. The intent is for most of these trails to be dedicated for biking use, although there may be places where equestrian use is shared. The biking trails would be classified as moderately-developed trails.

Until these trails are constructed, approximately 12 miles of former roads will be designated as biking trails. All 12 miles will be shared with equestrian use (see below). Given their current condition, these trails would be classified as moderately- to fully-developed trails.

Narrow, single-track mountain bike trails are proposed to be constructed at the north end of SPRA as part of a network of trails combined with DLSP. The location of this potential network will be determined in the future and could include up to five miles of trails on the SPRA property. These trails will be designated as primitive.

A relatively new (and still small) demand has emerged for “fat-tire” biking on snow. Riding fat-tire bikes would be allowed on all bike trails and on roads. Until the new bike trails are constructed, winter biking on the set of former roads designated as bike (and equestrian) trails would be permitted.

Biking is allowed at all times on SPRA roads open to highway licensed vehicles. Biking will also be allowed on the Great Sauk Trail.

**EQUESTRIAN USE**

Two types of equestrian experiences will be provided at SPRA. Up to 12 miles of designated horseback riding trails are proposed to be constructed, primarily in the Northeast Moraine and Rocket Area units. Generally, these trails will have native soil surfaces and be wide enough to accommodate two horses side-by-side. The intent is for most of these trails to be dedicated for equestrian use, although there may be places where bike riding is a shared use. These trails would be mostly classified as lightly-developed trails. Horseback riding is allowed at all times on SPRA roads open to highway licensed vehicles.

In addition to horseback (saddle) riding, the equestrian trails would also be open to horse-drawn vehicles (carts and buggies) up to two weekends a year. During these weekends, other authorized uses of the trails would still be allowed. Horse-drawn carts and buggies are allowed at all times on SPRA roads open to highway licensed vehicles.

A horse trailer parking lot and loading-unloading area is proposed near the border between the Northeast Moraine and the Rocket Area units (somewhere near locator point “21 M”). This designated use area will be large enough to accommodate up to 10 trailers and will also include a corral, hitching posts, 20’x20’ open-sided shelter, and vault toilet.
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Until these trails are constructed, approximately 12 miles of former roads will be designated as equestrian trails. These trails will be shared with bike use (see above). Given their current condition, they would be classified as moderately- to fully-developed trails.

When the master plan for DLSP is updated, opportunities for including equestrian trails and a horse campground are likely to be evaluated. If those facilities are ultimately constructed in DLSP, a trail connecting SPRA and DLSP would be desirable. This master plan authorizes the construction of a connecting trail with a final location to be determined later.

WINTER USE

No formal groomed cross country ski trails would be maintained by the Department. Rather, cross country skiing would be allowed anywhere on the property (similar to State Wildlife Areas). Likewise, snowshoeing is allowed anywhere on the property and in the winter the hiking trails will be designated for snowshoeing.

If a partner group wishes to groom ski trails on SPRA, the Department would enter into necessary agreements as feasible. Ski trails that are groomed would be closed during the winter to all other uses including equestrian, biking, dog sledding, skijoring, snowshoeing, and hiking.

During the period when the former roads are being used as biking and equestrian trails, dog sledding and skijoring are proposed to be allowed in the winter. When separate equestrian trails are constructed, dog sledding and skijoring would be allowed on, and limited to, these trails.

GREAT SAUK TRAIL

The Great Sauk Trail (GST) is proposed to extend from the villages of Sauk City and Prairie du Sac to near the southeastern part of Devil’s Lake State Park. About 4.5 miles would run through the former BAAP property, with about half this length in or along SPRA. Sauk County is leading a separate planning effort for the GST.

Five potential access points along the GST to SPRA are possible: (1) along the dead-end road running next to the DFRC bunkers over to the Magazine Area¹⁵, (2) at the temporary access road crossing, (3) to the proposed visitor center near locator points “10 S” or “11 S,” (4) at the base of the road headed up the bluff near locator point “5 S”), and (5) at the perimeter road in the northeast corner of SPRA. These connections will enable Great Sauk Trail users a variety of options to enter SPRA, travel throughout the property, and then return to the GST.

More information about the proposed trail can be found on page 84.

d. Designated use areas, including a visitor center

Objectives:

- Develop and operate a contact facility to serve as a “starting point” for visitors. The facility should provide interpretation of the BAAP and SPRA, maps, and information about recreational opportunities.
- Provide gathering places for visitors to picnic, sightsee, relax, and learn about the property.
- Provide facilities to support equestrian and rockety use of the property.

¹⁵ Pending approval by DFRC.
• Provide a site to support special events and the staging of special events.
• Enable some facilities to be reservable following standard Department procedures.

Proposed management:

Four modern\textsuperscript{16} day use areas will be developed (and will be designated use areas) and may include the following features:

• Reservoir overlook: 50-vehicle parking lot, vault toilet, 20’x30’ open-sided shelter, picnic tables, grills, deck with interpretive panels and seating, open-air amphitheater, interpretative and wayfinding kiosks.

• Weigand’s Bay: 6-vehicle parking lot, vault toilet, kiosk, fishing platform or pier that meets Americans with Disabilities Act (ADA) standards, picnic tables, overflow parking lot on STH 78.

• Lake Wisconsin overlook: 10-vehicle parking lot, 16’x16’ open-sided shelter, picnic tables, grills, vault toilet, kiosk. The general location of the site is shown on Map G. The exact location of the site will be determined once funding is secured and will be based on the actual facilities that will be built, site conditions, and other factors.

• Special event parking and staging area in the northwest corner of the Magazine Area: parking lot, up to a 2-acre grass field, 20’x20’ open-sided shelter, vault toilet, picnic tables, and grills. The general location of the site is shown on Map G. The exact location of the site will be determined once funding is secured and will be based on the actual facilities that will be built, site conditions, and other factors.

Other designated use areas will include:

• A modest-sized visitor center, potentially about 3,000 ft\textsuperscript{2}, will be constructed in the general vicinity of locator points “10 S” or “11 S.” The building’s location and size will be determined by the access leading into SPRA, future plans by the HCN and DFRC, funding availability, and potentially other factors. The visitor center will have staff offices, restrooms, and space for interpretive displays, potentially including displays from the Badger History Group. A paved 15-vehicle parking lot will be constructed to serve the visitor center and hikers and bikers starting their outings from the site. Picnic tables will be placed on the grounds, along with interpretive displays. An interpretive trail leaving from the visitor center will be constructed. The lands near the visitor center could also be used to plant a small orchard of fruit trees from varieties grown on farmsteads elsewhere on the BAAP. In total, the visitor center grounds may include up to three acres.

The visitor center will be the “jumping off point” for visitors and will provide interpretive wayfinding opportunities. The visitor center will be sited near the planned Great Sauk Trail and as a result will be both a starting point for many visitors that are biking as well as a stopping or turning around point for visitors who might be biking from Sauk City/Prairie du Sac or DLSP.

Until the new visitor center is built, Building 207 will be used as a temporary entrance station (once the needed improvements have been made to make it publicly accessible) and will be a designated use area.

\textsuperscript{16} See NR 44.07(7) for a description of the range of facilities that can be incorporated in a modern day use area.
• A rocketry site in the southwest corner of the Rocket Area (see below). Locator point “13 S” reflects the general location of the site; the exact location of the site will be determined once funding is secured and will be based on the actual facilities that will be built, site conditions, and other factors.

• A horse trailer parking and loading-unloading area in the Northeast Moraine with a corral, hitching posts, 20’x20’ open-air shelter, and vault toilet (see above). Locator point “21 M” reflects the general location of the site; the exact location of the site will be determined once funding is secured and will be based on the actual facilities that will be built, site conditions, and other factors.

Other facilities may be installed at designated use areas if demand warrants and funds are available (e.g., a play structure).

Two sites will be reservable and added to the list of State Park rental facilities (Form 2500-042) when constructed: (1) the shelter, picnic area and amphitheater at the reservoir overlook and (2) the shelter and picnic area at the Lake Wisconsin overlook.

e. Hunting and trapping

Objectives:

• Provide hunting and trapping opportunities that provide high-quality experiences and are compatible with other recreational activities.

• Stock pheasants in grassland areas to provide high-quality hunting opportunities.

Proposed management:

With the exception of designated use areas, designated trails, and areas closed to all public access, all portions of SPRA will initially be open for the following hunting opportunities:

• Hunting for all legal species and all legal methods = Saturday nearest October 17 to February 15

• Learn to hunt, youth hunt, hunters with disabilities seasons

• All six spring turkey hunting seasons

The hunting start date may change if conflicts emerge as visitation increases over time. If recreational use patterns warrant, the start date may be moved to November 15, which is consistent with the starting date in state parks (including Devil’s Lake State Park).

Pheasants will be stocked primarily in the Rocket Area, Magazine Area, and Northeast Moraine units at rates determined by the property manager and the local wildlife biologist.

Trapping will be allowed in the main part of the property\textsuperscript{17} from November 15 to February 15. All trap types will be allowed, but no trapping may occur within 100 yards of designated use areas, including the Great Sauk Trail when it is operational. Trapping will be allowed within 100 yards of other designated hiking, biking, and horseback riding trails in the main part of the property, unless posted as closed.

\textsuperscript{17} The “main part of the property” is described in the definition section on page xi.
Dog-proof trapping, as is allowed in state parks, will be allowed in the Magazine Area from November 15 to February 15. Trapping may not occur within 100 yards of the special event designated use area in the northwestern corner of the Magazine Area, but will be authorized within 100 yards of designated hiking and biking trails, unless posted as closed.\(^\text{18}\)

All hunters and trappers may access the property daily one hour prior to the opening of their season. All hunters and trappers will be required to leave the property, along with all other visitors, when the property closes at 11:00 PM.

f. **Dog training and trialing (hunting dogs), and off-leash access (all dogs)**

**Objectives:**

- Provide an area for visitors (who are not engaged in hunting) to have dogs off-leash.
- Ensure that dogs do not conflict with visitor’s enjoyment of the property and do not have a significant impact to nesting animals (particularly grassland birds).
- Establish a Class 2 dog training ground in upland habitats and of adequate size to provide a high-quality, year round experience that will have minimal impact on other visitors and is consistent with the goals of SPRA.
- Provide the opportunity for clubs to host dog trialing events.

**Proposed management:**

With the exception of the Magazine Area, in all other parts of SPRA dogs will be required to be on a leash not more than 8 feet long and under control at all times.\(^\text{19}\) *The exception to this requirement will be dogs used for hunting in the seasons listed above may be off-leash in all areas open to hunting.*

In the Magazine Area, dogs will be allowed off-leash from August 1 through April 14, except for in designated use areas, where they will be required to be on a leash not more than 8 feet long and under control at all times.

An approximately 72-acre area in the southernmost portion of the Magazine Area will be designated as a Class 2 dog training ground (see Map G). This area is a mix of woods and open grasslands and will be accessible from the parking lot proposed to be located south of the Hillside Prairie. This Class 2 training ground will be open all year and will not have any training restrictions.

Dog trialing events in the Magazine Area will be allowed via a special use permit.

Consistent with SPRA habitat management goals, the dog training grounds will be upland settings. No wetland or pond creation for dog training or trialing will be allowed. Equestrian use during dog training or trialing events will not be allowed.\(^\text{20}\)

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\(^{18}\) Department will pursue a change to NR 10 to reflect the proposed hunting and trapping seasons.

\(^{19}\) The Department will pursue a revision to NR 45.06 to reflect this leash requirement.

\(^{20}\) Pine Island Wildlife Area, located 15 miles to the northeast, allows equestrian use during dog training and trialing.
g. Water access and fishing

Objectives:

- Provide shore fishing access, including for mobility impaired visitors, at Weigand’s Bay.
- Provide carry-in boat access at Weigand’s Bay.

Proposed management:

Weigand’s Bay, the site of the old pump house, will be developed as a modern day use area providing carry-in boat access, shore fishing, and a fishing platform or pier with features that support anglers in wheelchairs. Until the former pump house is re-developed, the area will be closed to public access.

Although there are some small kettle ponds and small creeks on the property, they provide limited, if any, fishing opportunities.

There is not access to Lake Wisconsin from the Lake Wisconsin overlook in the Southern Link unit, and as a result no fishing or access is proposed at that site.

h. Wildlife watching, nature photography, and collecting edible plants

Objectives:

- Provide opportunities for wildlife watching (particularly bird watching), nature photography, and general scenic enjoyment.
- Provide opportunities for harvesting fruits, nuts, mushrooms and other edible plants.

Proposed management:

Wildlife watching and nature photography are allowed throughout SPRA, with the exception of the sites closed to all public access.

As is discussed later in this plan, many fruit (mostly apple) trees occur throughout the property, some of which are remnants from the farmsteads that existed on the property prior to its conversion to the BAAP. All visitors may harvest fruit from these trees, as well as pick berries, nuts, mushrooms and other edible plants, except ginseng.

i. Interpretative and educational opportunities

Objectives:

- Provide ample opportunities for visitors to understand the unique history of the site ranging from its geological and glacial history to its home to the Ho-Chunk and other Native American Tribes to Euro-American settlement and the development of the farming community to the construction, operation, and ultimate removal of the propellant plant.
- Collaborate with the Badger History Group, the Ho-Chunk Nation, the Dairy Forage Research Center, local residents, and others in developing educational and interpretive materials.

Proposed management:

Seven areas have been identified to highlight the human and natural history of the site. These are described starting on page 80. As with other park and recreation properties, a property interpretive plan
(PIP) will be developed after the master plan is approved. The PIP will provide more details regarding the location, formats, messaging, and operation of interpretive and educational materials.

j. Rocketry

Objectives:

- Provide opportunities for club-sponsored events to safely launch and retrieve sport rockets with minimal impact to other visitors.

Proposed management:

A small site (up to two acres) will be developed in the southwest corner of the Rocket Area to support sport rocketry events. This site, located to take advantage of prevailing winds, will be comprised of a launching section along with a viewing area. Design of the launch site and operations will follow the guidelines of the National Association of Rocketry. Launching of rockets will be by special use permit only (typically to a club) issued by the property manager and will be coordinated to avoid conflicts with Wisconsin Army National Guard training exercises. In total, rocketry events will be limited to 10 days per year. Rocketry events will not be allowed during the pheasant hunting season. The site will be a Type 4 recreation setting and a designated use area.

k. Building 207 and the Badger History Group museum

Objectives:

- Utilize Building 207 to the degree practical, recognizing that the building has limitations that constrain its long-term viability.

- Provide space to the Badger History Group to operate a public museum.

Proposed management:

Approximately 20 acres around the Building 207 site will be classified as a special management area. Although Building 207 is currently closed to the public pending repairs and updates needed to meet building codes and access requirements, the Department’s intent is that, until a new visitor center is built, this building will provide interim space for the Badger History Group museum and archive collection as well as office space for DNR staff. In essence, the building will serve as a temporary “entrance station” for the property until the new visitor center is constructed.

Depending on the future need to consolidate office space for DNR wildlife management, forestry, law enforcement and other staff from elsewhere in Sauk County and to store various types of equipment, one or more new buildings may be constructed in this 20-acre area (e.g., a building for offices and another for storage). New buildings may also provide secure, long-term storage of archival material related to the property.
I. Drinking water

Objectives:
- Provide drinking water as possible and practical.

Proposed management:
Drinking water on the property is currently available only at Building 207, which is closed to the public until necessary improvements are made. The Department plans to construct a new visitor center, which will include drinking water sourced from either the local municipal system or an on-site well. Drinking water may also be provided elsewhere on the property if needed and cost effective, including providing water for grazing animals.

Pursuant to deed restrictions, the Department will not access or use groundwater under SPRA without prior approval from the Army.

m. Special events and associated facilities

Objectives:
- Provide opportunities for a range of special events.
- Balance requests for special events with visitor’s expectations to use and enjoy the property.

Proposed management:
The DNR allows participatory special events and other uses by non-DNR groups on DNR lands if such events and uses are:
- Within the scope of the DNR’s mission statement.
- Allowed by the current master plan for the property.
- If competitive, the event is non-motorized.
- In compliance with all local, state, and federal laws.
- The events are conducted at no cost or at a reasonable cost to the DNR.
- The event must be nonprofit in its essential nature.

As is the case with other DNR properties, special events will be authorized through the use of the Special Events Recreational Use Application and License (Form 2200-127). The property manager will have the authority to establish appropriate conditions and approve applications. Generally, special events will not be authorized on State or Federal holidays or holiday weekends, or when they would conflict with another scheduled event that is allowed under normal use. When reviewing requests, the property manager may consider past annual events that use specific dates.

Given its size and detached location, portions of the Magazine Area are well-suited to host special events. To facilitate special events, an area to host or stage special events will be constructed in the northwest corner of the Magazine Area. This site will include an approximately two-acre grass field, parking, a 20’x20’ open-sided shelter, vault toilet, picnic tables, and grills. The site would be a designated use area and classified as a Type 4 recreation setting. The general location of this site is shown on Map G.

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21 See the Recreation Area Operations Handbook (2505.1) for additional information.
CHAPTER II: Management, development, and use

Special events could occur just within this approximately 3-acre site, in a part of the Magazine Area, in all of the Magazine Area, or potentially in the whole SPRA property. For events held in the entire Magazine Area, access to the area could be restricted to just the event participants while the rest of SPRA could be open for other visitors. Special events in the Magazine Area would not be authorized to use the native community management area (Hillside Prairie) or the special management area (“Geotube” site).

Special events would be limited to no more than four consecutive days. In total, special events that reserve the entire Magazine Area would be limited to no more than five weekends between Memorial Day and Labor Day. Events that could impact nesting grassland birds would not be authorized in sub-unit MA2 from April 15 to July 31. Depending upon the nature of the special event, the property manager may temporarily close the road to the Thoelke Cemetery during the event.

The event organizer or sponsor may be required to provide the Department with certificates of insurance, including bodily injury, death, and property damage, for the approved event and dates. The event organizer or sponsor are responsible for any and all damages to the property resulting from the event and the Department shall either estimate costs or make the necessary repairs and bill the organizer or sponsor for the direct costs of repairs.

Examples of sponsors that might hold events here include boy and girl scouts, dog trialing clubs, outdoor recreation clubs, schools, and social, cultural, and natural resource-based organizations.

n. Shooting range

The Department presented the Natural Resources Board a guidance document in 2014 that addressed, among a number of issues related to shooting ranges, general criteria for evaluating options to develop ranges at DNR owned properties. The NRB endorsed the goal of providing additional public shooting opportunities, particularly near population centers in the southern and eastern part of the state. The guidance document identified gaps in the distribution of existing public shooting ranges based on distance and population density, with a general goal of providing public shooting opportunities within 30 miles of most residents. The guidance also noted that establishing new public shooting ranges on DNR lands should consider need, amount of public support, cost, hunter education opportunities, and siting constraints.

The Department is currently pursuing construction of a new shooting range (with 100-yard, 50-yard, and 25-yard distances) at the Mud Lake Wildlife Area in Columbia County. The Department is also continuing its efforts to arrange for additional public use at private ranges in Sauk County, although to date this has not resulted in increased public opportunities at these ranges.

While the Columbia County site is about 20 miles east of SPRA, there is still a large population in the area that is, or will continue to be, underserved for public shooting range opportunities. To address this need, the Department will initiate a process to locate a public shooting range in Sauk County, similar to the process used to identify the Mud Lake Wildlife Area site. This evaluation will incorporate DNR-owned lands in the vicinity and will include multiple opportunities for the public to provide comments and input.

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22 See page 102 for a description of the Columbia County shooting range siting process.
2. PROPOSED HABITAT MANAGEMENT, BY COVER TYPE AND SPECIES-SPECIFIC ISSUES

This section describes the habitat and species-specific management techniques that the Department proposes to use at Sauk Prairie Recreation Area. The Department will use similar types of habitat management prescriptions to achieve desired results at many different sites on the property. For example, the suite of management actions the Department will use for oak openings will be the same across the property, but different actions will be used in different locations at different times based on conditions, opportunities, needs, and potential other factors.

It is difficult to predict how the future habitat management of the property will unfold in the years to come, due in part to the level of disturbance as well as the scale of infestation by invasive species. As such, Table 2 lists an estimate of the amount of different habitats that will be restored after 15 years. In addition, the final target (50 years) is also provided. The Department proposes to use the techniques described in this section to restore, re-create, and manage habitats. However, the agency also recognizes both that it will need to be adaptable to changing habitat conditions, as well as the likelihood that much will be learned as different strategies are implemented and evaluated.

To achieve the desired habitats at SPRA, particularly grasslands and oak openings, much of the property will need to undergo intensive habitat re-creation over time. In some parts this will be even more challenging due to the loss or past disturbance to the topsoil. The most pressing need, though, is to maintain the functional aspects of many of the property’s surrogate habitats, many of which are rapidly being invaded by invasive species (especially shrubs) and are soon likely to be degraded to the point that they won’t respond to cost-effective management strategies such as prescribed fire. Indeed, some areas have already passed that tipping point and will require intensive efforts to recover.

In cases where plants and animals listed as threatened or endangered in Wisconsin are known to occur at SPRA, management actions such as prescribed fire will follow the general protocols for incidental take developed by the Bureau of Natural Heritage Conservation.

Opportunities exist for the DNR to collaborate with DFRC, HCN, and researchers from a variety of institutions to study the ecological and economic outcomes of habitat management techniques, in particular conservation farming practices. Of special interest is better understanding the ability of different types of grazing systems to restore areas that have been infested with invasive plants. Potential habitat management and restoration research opportunities are further described at the end of this chapter on page 95.

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a. Habitats

Grasslands – native and surrogate/degraded

Native prairie sod is very rare on SPRA with the largest site only about 3 to 4 acres and located in the western border of the Magazine Area (known as the Hillside Prairie). Blocks of restored and surrogate grasslands exist on the property, most notably in the Rocket Area (RA1, RA2, and RA3), Magazine Area (MA2 and MA6), and the Northeast Moraine (NM4, NM5, and NM6). These vary in their composition and diversity.

Many of the areas that are currently surrogate grassland or are proposed for restoration to native grassland have been disturbed, first by agriculture, followed by the removal of farm buildings, and then the construction and subsequent demolition of buildings and other structures for the BAAP. Some portions have patchy or thin vegetation, the majority of which are non-native grasses and forbs. Some parts suffer heavy infestations of invasive herbaceous vegetation, such as spotted knapweed. Overall, the existing grasslands at SPRA lack native species diversity. This is not to suggest that these grasslands do not have ecological values; they do, but their ecological values are primarily derived from their physical structure rather than species composition.

Other areas of SPRA that are proposed to be restored to native grassland habitats are more significantly impacted, either because of highly disturbed soils or because of dense infestations of invasive shrubs and weedy trees. In these areas, grassland management will typically follow a two-phase approach: first, taking active (and often aggressive) steps to restore grasslands to a functional state and then, second, maintaining and enhancing grasslands using less aggressive and time-consuming approaches.

**MANAGEMENT OBJECTIVES**

- Address non-native and invasive species. The highest management priority should be given to those areas that are, or will soon be, facing significant invasion by aggressive, non-native herbaceous and woody vegetation.
- Maintain large, open blocks of grassland habitat. Remove hedgerows, plantations, and other low quality forest patches that fragment grasslands. Seek to connect grasslands on DNR lands with those restored and managed on HCN lands.
- Provide high quality habitat for grassland-associated gamebirds.

Grasslands

Grasslands are characterized by a lack of trees and tall shrubs and are dominated by grasses, sedges and forbs. Nearly all of the native prairies across Wisconsin have been converted to farmland, overgrazed, succeeded to woods, or developed. The few remaining small remnants are typically confined to railroad corridors, bluffs, and other sites that could not be easily converted.

In the western half of the SPRA (where part of the former Sauk Prairie once was) the native grasslands were dry and dry-mesic prairies dominated by little and big bluestem, side-oats grama, Indian-grass, and prairie dropseed. Common forbs included coneflowers, asters, prairie-clovers, blazing-stars, and goldenrods.

Surrogate grasslands now represent the vast majority of grassland habitat in the state. Surrogate grasslands are similar in structure to the former prairies that occurred in Wisconsin. These habitats can include agricultural lands such as hayfields, small grains, fallow fields, old fields, pastures, set-aside fields (e.g., CRP), and public lands planted to non-native cool-season or native warm-season grasses and forbs. Although surrogate grasslands can harbor many native prairie species and provide critical habitat for many grassland wildlife species (notably many rare grassland birds), they fall far short of the rich species diversity of the original prairie.

See the Definitions section on page ix for more information about grasslands.
• Provide successful nesting habitat, primarily for grassland obligate bird species but also some shrub-grassland species, particularly those on the list of Species of Greatest Conservation Need.
• Provide habitat for grassland-obligate mammals such as prairie vole, prairie deer mouse, and harvest mouse.
• Improve soils to the degree practical.

Oak openings – native and surrogate/degraded

Although vast amounts of the SPRA property were oak opening habitat in pre-settlement times, these occurrences were eliminated or degraded during the farming period and the subsequent BAAP development and operation. Some remnants of degraded conditions remain. In some places large open-grown oaks are now within dense forest blocks or have been overgrown with invasive shrubs and early successional trees. In other areas, for example in the Magazine Area, there are large cottonwoods and other trees that typically aren’t associated with oak openings, but that in some ways provide “surrogate” oak opening settings.

Two large blocks (the Northeast Moraine and the Magazine Area) are proposed to be restored and managed primarily as oak opening habitat. These areas currently have a mix of grasses and forbs, with different densities of brush and trees. Some portions have extensive, dense grass cover; other areas support thinner and patchier vegetation, particularly where the soil is more disturbed and has a higher sand content.

Generally, the areas proposed for oak openings currently lack much plant diversity and in many cases the grasses present are non-native species or are native species but aren’t local genotypes. This is not to suggest that the existing vegetation does not have ecological value; it does, but its ecological value is primarily derived from the physical structure of the trees and herbaceous layer rather than species composition.

Although the Department would like to eventually replant the understory with more diverse and local-genotype species mixes, maintaining the mix of open grasslands with open grown oaks and pockets of trees -- the “savanna aspect” -- is the primary current need. Most of the two large blocks proposed to be managed as oak openings have dense enough herbaceous growth to sustain prescribed fires that can be used to reduce undesirable shrub and tree growth. Similarly, occasional livestock grazing may be effective at reducing some brush and shrubs.

Other areas that are proposed to be restored to oak opening habitats have been significantly impacted, either because of highly disturbed soils or because of dense infestations of shrubs, brush, and weedy trees. In these areas, management will typically follow a two-phase approach: first, taking active (and often aggressive) steps to restore herbaceous vegetation capable of supporting successful fires and then, second, maintaining and enhancing these habitats using less aggressive and time-consuming approaches.
In several areas proposed to be restored to oak openings, oaks will need to be planted. However, initial management needs are to reduce shrubs and early succession forests. This will largely be accomplished through the repeated use of prescribed fires over many years, which would likely damage or kill most newly planted trees. Once a more open condition has been achieved and the frequency of fires is reduced, then oaks will be planted.

**MANAGEMENT OBJECTIVES**

- Address non-native and invasive species.
- Restore a large block of oak opening habitat between the more wooded areas to the north (Devil’s Lake State Park) and the more open grasslands to the south. Restore a second large block of oak opening in the Magazine Area.
- Provide high quality habitat for deer, turkeys, and small game.
- Provide successful nesting habitat for oak opening species, particularly species with declining populations throughout the Midwest.

**Shrublands (upland)**

Characterized by often dense thickets of woody non-native invasive shrubs, over the last two decades shrublands have become a dominate cover type on SPRA. In the absence of aggressive management, they are dramatically increasing their distribution over time. Under natural conditions, upland shrubland is generally a transitory habitat, arising either due to a temporary absence of fire in an open setting or as an interim phase to a wooded condition.

Honeysuckle, autumn olive, multiflora rose, and buckthorn are the primary shrub components and support several birds such as Bell’s vireo (State Threatened), hooded warbler, American redstart, orchard oriole, brown thrasher and rose-breasted grosbeak.

Even if considerable grassland and savanna restoration work is achieved at SPRA over the next several decades, many portions of the property are likely to have a significant shrub component. The DNR’s intent is to maintain shrubs as part of grasslands and oak savannas, albeit on a reduced scale from the existing coverage.

**MANAGEMENT OBJECTIVES**

- Maintain some areas in native shrub cover as part of a mosaic of grassland and savanna habitats.
- Provide habitat for shrub-associated species such as Bell’s vireo (State Threatened), hooded warbler, American redstart, orchard oriole, brown thrasher and rose-breasted grosbeak.
- Provide habitat for deer, turkeys, and small game.

**Oak Woodlands**

There is an opportunity to restore and manage oak woodlands in the Bluff Vista unit where degraded oak woodland and small embedded open rocky “glade” habitats are found coming down the bluff (and potentially including part of Devil’s Lake State Park). Although this area was more open before Euro-American settlement and before the ammunition plant was constructed, it is now densely covered with trees and shrubs and will require active management to restore.
The other area proposed to be restored to oak woodland is the block of land east of STH 78 in the Southern Link unit. This approximately 32 acre site is currently farmed and will be planted with trees to recreate an oak woodland habitat transitioning to oak opening, both towards the water (to improve views of Lake Wisconsin) and to the west (the rest of the Southern Link unit).

Because of their mostly closed canopy combined with the lack of woody understory, oak woodlands provide long sight lines in shaded settings. These conditions are attractive for many recreation activities, particularly trail-based pursuits as well as provide habitat for a number of declining plants and animals.

**Management Objectives**

- Control non-native, undesirable, and invasive species, including trees such as elm, basswood, red maple, and ash.
- Provide quality habitat for oak woodland species, particularly species with declining populations throughout the Midwest.
- Invigorate light dependent understory plant species, particularly species with declining populations.
- Create open, park-like conditions typical of managed oak woodlands, both for ecological and aesthetic purposes.
- Provide quality habitat for deer, turkeys, and small game.

**Forests and plantations**

At the time of the BAAP’s construction in 1942, nearly the entire property was used for farming. Wooded areas were generally confined to steep slopes, wet areas, or sites that were unsuitable for cropping or grazing. A few scattered woodlots associated with farmsteads were also present.

Over the ensuing 33 years of the plant’s operation some wooded areas became established, mostly through gradual succession, in places that were not developed. Many wooded areas that developed in the 1950s and 1960s are now comprised of northern hardwoods.

**Oak woodland**

The oak woodland community occupies a position on the vegetation continuum that is intermediate between oak openings and the oak forests (especially southern dry forest). Oak woodland differs from oak openings in the limb architecture of its trees – they are characterized by more upward growing crowns rather than the wide, spreading crowns of oak openings.

Describing the differences between woodland and forest is difficult because of the absence of intact reference stands, but the oak woodland was subjected to frequent (annual) wildfires of low intensity, lacked the dense woody understory that characterizes most oak forests, and often had relatively lower canopy closure than true forest.

See the Definitions section for more information about oak woodlands.

**Southern Dry-Mesic forest**

Oak is a predominant cover type in the southern dry-mesic forest.Characteristic dominants in oak forests are black oak and northern pin oak, although white, bur, and red oaks sometimes exert dominance. Common associates include: aspen, pine, and red maple. The herbaceous understory flora is diverse and includes many species prevalent in the southern dry forest.

Southern dry-mesic forests typically occur on loamy soils of glacial till plains and moraines, and on erosional topography with a loess cap, south of the tension zone. Typical surface soil textures are loamy sand and coarse or shallow loams. This community type was common historically, although white oak was considerably more dominant than red oak, and the type is still common today.

**Central Hardwoods**

The central hardwood cover type consists of variable associations of upland hardwood species, predominantly oaks, hickories, elms, black cherry, hackberry, red maple, white ash, green ash, basswood, and sugar maple. Oaks are the most common overstory dominants. However, no single tree species constitutes a majority of the timber volume. Central hardwoods tend to be mid-successional habitats; successional directions tend toward northern hardwoods. Northern hardwoods become most prominent on mesic sites. Red maple, elms, shagbark hickory, and ironwood increasingly dominate sites that are marginal for the vigorous growth of sugar maple, or sites that lack northern hardwood seed sources.
red oak, red maple, Siberian elm, box elder, green ash, black cherry, and cottonwood. Pine, spruce, and
walnut plantations were also planted at different sites around the BAAP.

When the plant ceased operations for good in 1975 many areas were no longer actively managed and the
extent of wooded areas increased, again through natural succession. Wooded areas that developed in the
late 1970s and early 1980s are generally still comprised of earlier successional species such as box elder and
aspen, along with some black cherry.

Apart from the plantations, the forests at SPRA are all classified in the DNR’s forest inventory system
(WisFIRS) as central hardwoods. Many types and conditions of forests are captured within the “central
hardwoods” category (see sidebar). In the DNR’s Natural Heritage Inventory system, the higher quality
forests at SPRA have characteristics associated with southern dry-mesic forests. Based on the current forest
cover types and stand conditions, it appears that only a limited amount of active forest management has
occurred over the last 70 years. One undated management plan stated that the first successful timber
harvest on BAAP occurred in 1974 when 82,600 board feet of sawtimber and 47 cords of pulpwood were
removed.

The SPRA property provides a unique opportunity to restore and maintain a large “transitional” landscape –
from the deep forests of Devil’s Lake State Park to the open grasslands at SPRA and adjacent HCN land. Oaks
would be maintained as the predominant tree species throughout much of this gradient.

Many of the wooded areas will be thinned or harvested to restore them to oak woodland, oak opening, or
prairie habitats. In other areas, oaks, hickories, and other trees will be planted to develop the desired
ecological conditions.

In places like SPRA where invasive species are widespread and are the dominant vegetation in areas, it is
critical to appropriately manage them before and/or after timber sales to ensure that the resulting habitat
meets long term goals. There are several places in the property where timber was harvested without proper
follow-up treatment; the results are dense thickets of invasive plants, particularly shrubs, rather than the
desired habitats. Forest conversions will only be completed once there is a plan, as well as adequate staff
and resources in place to complete the conversion to other desired habitats. Depending on the situation, this
may involve treatment of the understory prior to or shortly after a timber harvest. The Department’s intent
is to avoid replacing productively growing timber with dense stands of invasive plants.

**MANAGEMENT OBJECTIVES**

- Restore and manage wooded habitats in a gradient of tree densities from southern-mesic forests to
  oak woodlands to oak openings to open grasslands.
- Provide high quality habitat for deer, turkeys, and small game.
- Harvest marketable forest products on a predictable timeframe.
- Harvest the plantations, balancing economic value with ecological needs. Potentially leave some small
  representations of the plantations for interpretive purposes.

**NOTE:** Although the timing of future harvests of plantations is estimated in the descriptions of
management by unit, the plantations may be harvested or thinned earlier to meet habitat
management needs or improve the effectiveness of timber harvest elsewhere on the property.
Lowland herbaceous, emergent vegetation and ponds

Although SPRA is primarily an upland setting, there are a few scattered lowland areas that support wetland and open water habitats. Some of these wetlands are naturally occurring, others have been created. Open wetlands are part of the mosaic that makes up the tallgrass prairie ecosystem.

Ponds occur in a couple of locations throughout the property. Although they are all small, they add to the habitat diversity in these local areas. The extent of the emergent or wet-soil herbaceous vegetation varies depending on water levels, which changes from year to year. Ponds that typically hold water are found at the Oleum West wetland, Kerns Corners, in the Northeast Moraine, and the Magazine Area. None of these ponds are known to harbor fish, and as a result they are important sites for amphibian conservation.

Some of the major areas of herbaceous wetlands, wet depressions, and ponds at SPRA are:

- Kerns Corner ponds in BV1, which are the result of digging out clay, are rimmed with cattail, reed-canary grass, a few native grasses and sedges.
- Thoelke, Henry and Steidtmann ponds in MA1 and MA2. These native kettle depressions are located in the northeast part of Magazine Area, with the Henry Pond possibly deepened as a result of pre-BAAP roadway on its west edge. Native emergents, submergents and reed-canary grass are present.
- The former Oleum plant area has two low areas. The east one is a native kettle depression which used to receive treated water from the oleum production process. Native emergent vegetation along with reed-canary grass are present and some shagbark hickories, ash, box elder and big-toothed aspen are found in surrounding uplands. The western one, where the stream flowing off the South Bluff is impounded by a berm and railroad grade, is generally wooded.
- The settling ponds/Final Creek area along the southern portion of the property. While there are some native sedges, grasses, and herbs in the low areas, reed canary grass and cattails are also found here.
- Eschenbach and Huber Ponds in NM6 and NM5 are native kettle depressions east of the former nitroglycerin area. The westernmost pond was probably deepened by construction of the roadway on west its side; it had contaminated soil dug out of it during the deconstruction phase.
- Mitigation wetland. This is a small, man-made pool and marsh at the lower end of the geotube that holds the Gruber Grove sediments. It contains native herbaceous and emergent vegetation along with reed-canary grass.

Management Objectives

- Maintain and enhance the quality and extent of a mosaic of wetlands for the benefit of wildlife.
- Restore wetland hydrology.
- Reduce non-native and invasive herbs, grasses, shrubs and trees.
- Increase wetland diversity/species richness by introducing native wetland plant species.
- Provide opportunities for wetland research, education and interpretation.
- Protect or restore pond water quality for the benefit of wildlife.

Lowland shrub

This habitat was not common on the former BAAP lands prior to Euro-American settlement and only a few scattered areas in SPRA currently harbor this habitat, mostly along the lower portions of the South Bluff and
in areas where clay was dug out near Kern’s Corner. In shrub-settings, tall shrubs such as willows and dogwoods typically dominate. Understory vegetation is currently predominantly non-native species, although species such as button bush, bluejoint grass, as well as several types of sedges, nettles, and ferns would likely have been common prior to settlement.

**Management Objectives**

- Maintain and enhance the quality and extent of a mosaic of lowland shrub habitats for the benefit of wildlife.
- Restore wetland hydrology where appropriate.
- Allow native willow-dogwood shrub carr where soil and moisture are appropriate and where this does not interfere with exotic shrub control and prescribed fire.
- Reduce non-native and invasive shrubs.
- Increase wetland diversity/species richness by introducing native wetland plant species.
- Provide opportunities for wetland research, education and interpretation.

**Streams**

Two streams flow through SPRA, both with headwaters that originate in Devil’s Lake State Park and are part of the Otter Creek watershed. The drainage pattern of these streams is generally north to south, flowing from the South Bluff of the Baraboo Hills to the prairie below. Within Devil’s Lake State Park these streams flow over and through rock fields, sometimes disappearing from view. Historically, the streams flowed out into the prairie and were absorbed into the sandy soils. The hydrology of these two streams within SPRA has been altered through ditching, channelization, artificial impoundments, road construction, and perched culverts. Currently, mesic to wet grasslands and forests border most of the streams and ditches.

The larger, more western of the two streams flows out of a pine hollow and has been ditched in a westerly direction. It is connected to two ponds, both on HCN land (the western pond is known as the “Ballistics Pond”). During rain events, the stream flows through a small swale to the west and joins a tributary of Otter Creek (which is on the west side of USH 12). Several north-south oriented ditches bring additional surface water to the creek during periods of heavy rainfall. Although unnamed, most locals refer to this stream as Pine Glen Creek (WBIC: 1259400).

The second stream, in the northeastern part of SPRA, flows from a perched wetland area within Devil’s Lake State Park and courses south through culverts under the north perimeter road and then flows past the Oleum landfill through a series of ditches. Many small seeps originate from the base of the Baraboo Hills and flow in a southerly direction into this stream, eventually contributing to scraps and ponds at the base of the bluffs. Remnants of sedge meadow are present in the spring seeps, but are dominated by non-native or invasive herbs, grasses, shrubs and trees. This stream is also unnamed (WBIC: 5031986).

**Management Objectives**

- Improve streams and their corridors for the benefit of wildlife and fish.
- Reduce flooding in the Otter Creek sub-watershed.
- Reduce streambank erosion and improve stream water quality.
- Improve in-stream habitat to benefit aquatic wildlife.
- Increase the aquatic-terrestrial interface for shoreland and terrestrial animals.
• Provide opportunities for aquatic research, education and interpretation.
• Work with HCN to develop and implement plans to re-establish the flow of the streams out into the open prairie to be absorbed and drain into the groundwater.
• Maintain water quality of the ponds.
• Manage the vegetation surrounding the ponds to benefit wildlife, particularly amphibians.

Farmland

Of all the cropland within the former BAAP, only a small portion lies on SPRA. Approximately 145 acres of land are currently used to grow row crops by the DFRC under a land use agreement. These lands have been actively farmed since settlement. Depending on soil conditions and other factors, some additional lands within SPRA may be suitable as cropland. In particular, there are likely opportunities to return some portions of the property to row crops or other farming systems for a limited number of years as a means to reduce weed species and prepare soils for replanting to native species.

Many areas on SPRA may be appropriate for different grazing animals, particularly those that can be used to assist in managing invasive shrubs. Although significant portions of the BAAP property were grazed during the plant operations, most of the fences are now gone. In addition, grazing operators would need to develop a system for providing water.

MANAGEMENT OBJECTIVES

• Maintain existing cropland in agricultural use until conditions are appropriate to restore to native habitats.
• Establish pastures on which to graze cattle, goats, bison, or other animals as a means of addressing invasive plants and other undesirable species.
• Evaluate the effectiveness of different grazing and cropping systems to achieve both habitat management objectives and economic returns.
• Limit public access on active farmlands as needed to ensure public safety and to avoid impacts to cropping or grazing operations.

b. Species

This section describes the management actions proposed to address the life history needs of particular species that may not be sufficiently addressed in the habitat management strategies described previously.

Game species

The Department believes the proposed management of habitats, as described in the preceding pages, will maintain and enhance populations of game mammals and birds known to occur at SPRA. In addition, pheasants will be stocked at rates set by the property manager and the local wildlife biologist, primarily in the Rocket Area, Magazine Area, and Northeast Moraine units.

Bats

Many species of North American bats that hibernate in caves are at risk from an emerging disease known as White-Nose Syndrome (WNS). This rapidly spreading disease, which causes mortality rates averaging 95%, was documented in Wisconsin for the first time in 2014. Broad scale treatments using fungicides or bio-
control agents are not possible in caves due to likely impacts to other sensitive cave organisms. Further study of potential treatments and recovery options is urgently needed.

Bats are currently hibernating in three places on the former BAAP, but not on SPRA. One of the hibernation sites is a set of three former storage bunkers partially built into the hillside on DFRC land. DNR bat scientists are collaborating with DFRC to use the bunkers for bat hibernation and research. The bunkers provide stable temperatures and high humidity, favorable conditions for bat hibernation. Unlike caves or other natural hibernation sites, the bunkers can be cleaned and disinfected to reduce exposure to the fungus that causes White-Nose Syndrome. The bunkers can also be sealed to prevent disturbances to hibernating bats.

At the Department’s request, five storage bunkers in the former “Nitro” area (parcel P2 within sub-unit NMS) have been left to provide potential additional bat hibernation sites. To make them more useable as hibernation sites, additional soil may need to be added to the tops of the bunkers and the front entryways will need to be insulated and secured. In collaboration with scientists at the University of Wisconsin, the US Fish & Wildlife Service, the National Wildlife Health Center, and others, the Department has prepared an implementation strategy for managing WNS in Wisconsin. This strategy may involve the Department’s participation in WNS research requiring the use of the bunkers.

**Species of Greatest Conservation Need (SGCN)**

Many Species of Greatest Conservation Need occur or have been known to occur on the former BAAP and SPRA (see the RPA for a full listing of species). The Department believes the proposed management of habitats, as described in the preceding pages, will maintain and enhance populations of the SGCN species known to occur at SPRA, as well as possibly support additional rare species over time.

**Bluebirds**

A series of bluebird boxes were established in the Magazine Area, originally as part of an assessment of risks to wildlife health from potential exposure to soil contaminants. The boxes are maintained by volunteers. The continued management of bluebird boxes or other types of similar efforts to benefit wildlife is authorized in this plan. Motorized access to construct or maintain bird houses or other similar projects is limited to the open public roads, unless approval is granted by the property manager for other arrangements.

**Neotenic Salamanders**

Two large concrete reservoirs, both about 12 feet deep, that supplied water to the BAAP complex exist about halfway up the bluff. The valves that drain each reservoir are rusted closed. The west reservoir is designed to hold approximately 4 million gallons. It currently has about three feet of water and apparently has one or more cracks in the concrete at about this level. It was regularly treated with chlorine until sometime around 2000. The east reservoir is larger and is designed to hold about 6 million gallons. The water level in this reservoir has fluctuated somewhat over the years due to changes in precipitation and groundwater flow but typically holds at least ten feet of water. Both reservoirs were emptied, cleaned, repaired, and refilled multiple times since their construction in 1942; the last known draining of the reservoirs is unknown. There is no connection between the reservoirs.
The east reservoir contains an estimated 1,200 neotenic Eastern Tiger Salamanders that live their entire lives and breed here in a larval form. It is surmised that at some point adult tiger salamanders23 fell into the reservoirs, laid eggs, but then could not climb out due to the vertical lip at the top of the reservoir. These adults must have eventually drowned (since adult salamanders have lungs). Their offspring were born and developed into a larval stage. Under normal conditions, in the autumn these animals would have climbed out of the water and progressed through the rest of their metamorphosis – including absorbing their tail fins, developing larger legs, and converting their breathing from gills to lungs.

However, since these larval-stage salamanders could not scale the vertical lip at the top of the reservoir they were forced to stay in the water. Although many of these individuals may have continued to develop into adult forms and subsequently drowned, at least some retained larval features but become sexually mature – a condition known as neoteny. And this cycle appears to have continued for years. Although the neotenic salamander population was formally documented in 1993, it is unknown how long they have existed in the east reservoir. The salamanders were noted by BAAP workers many years ago. In 2014, a small population of apparent neotenic salamanders was also located in the west reservoir (a little more than a decade after the last chlorine treatment). Research has shown that the salamanders found in the reservoir are not genetically different from the local population – they are the same species.

Neotenic salamanders have developed elsewhere in the country in waters that are permanent, have an adequate food supply, and do not have predator (fish) populations. Neoteny is rare, in part because there are few permanent ponds that do not have fish – either naturally or as a result of stocking. The population of neotenic Eastern Tiger Salamanders in the east reservoir is believed to be the largest currently in existence, likely because the reservoir is a large, permanent waterbody with adequate energy inputs and supports a variety of aquatic life without fish.

Unfortunately, the population of salamanders in the east reservoir has contracted a virus (a form of the herpes virus) as well as potentially other diseases that apparently do not occur in the local salamander population. As such, these individuals cannot be released back into the wild. Salamanders in the west reservoir have been tested for health concerns with the results pending.

The Department recognizes that this population of tiger salamanders is an interesting consequence of the propellant plant and has research and educational value. The Department is identifying institutions (including museums, aquaria, zoos, schools, and research organizations) that are interested in receiving neotenic salamanders for research, education, or display purposes. Potentially beginning in 2015 or 2016 the Department plans to capture and distribute the requested number of salamanders to these institutions. For health reasons, organizations receiving these animals will be required to maintain them in captivity for their entire lives.

The Department also recognizes that these salamanders are potentially an appealing draw for the public to visit the property. However, given their steep sides, the reservoirs pose a significant public safety hazard, even with the existing chain link fences that surround them. As such, when funding is available, the Department intends to raze and level the reservoirs. Remaining salamanders in the reservoirs at that time will be euthanized.

23 Eastern Tiger Salamanders (Ambystoma tigrinum) are common in Wisconsin and live in a variety of habitats including grasslands, savannas and woods. They have adapted to living in agricultural and urban landscapes and readily breed in farm ponds. Adults and larvae eat almost anything they can catch and swallow, from earthworms and beetles to young rodents. They range in size anywhere from 6” to slightly larger than one foot long.
**Fruit trees**

A number of fruit trees, mostly apple along with some pear and plum trees, occur on SPRA. Although many are less than 70 years in age (and thus must have originated from naturally dispersed seeds), others are older and are associated with the farmsteads that occurred on the property prior to the construction of the BAAP. A group of local citizens is inventorying and mapping the locations of these trees and is interested in better understanding the varieties present and their potential value in management of these crops. These trees have not been actively managed for decades and are in varying stages of health.

The Department will continue to work with the local group on their efforts and will accommodate the preservation of the specimen trees to the degree practical in the overall management of habitats on the property. The Department may plant some of these varieties near the future visitor center as part of the overall interpretation of SPRA.

c. **Management Actions**

The management strategies and prescriptions that the Department proposes to use to manage habitats at SPRA are described below. These prescriptions are consistent with the Department’s approach to managing other properties in the region. The property manager may, by posted notice, close portions of the property to public access that are being intensively managed, including areas being grazed.

**Mechanical cutting**

A variety of machines are available to cut, mow, and chop up brush, shrubs, and woody material (e.g., Fecon machines and brush hogs). The Department will use the type of machine best suited to the nature of the management needed. In some cases, it may be most effective to use chainsaws. In most situations woody residue would be left in place to decompose, piled and burned in prescribed fires, or removed as part of a biomass harvest (see below). After cutting, the stumps may be treated with herbicides to limit re-growth.

**Forest Product Sales**

Commercial timber sales or firewood sales will be used to remove marketable forestry products. Harvest treatments could include clear cutting, thinning, shelterwood, single tree or group selection, and salvage cutting. The Department will follow the guidelines and best management practices described in the Department’s Timber Sale Handbook (2461), Public Forest Lands Handbook (2460.5), and the Silviculture Handbook (2431.5) when conducting forestry actions on the property.

Where feasible, and depending on current management objectives, timber sales will be used to sustainably manage forests and/or to convert current forest stands into the desired cover types described in this plan. This will not be a viable option in all of the stands on the property. Some of the Central Hardwood forest stands, for example, contain low volumes, undesirable species, and poor quality timber. Where possible, though, timber sales will allow managers to attain management objectives at a minimal cost. Timber sale activities in more desirable stands may be combined with those in less desirable stands in order to achieve desired objectives. Such activities can improve the SPRA property for the future without a significant expenditure by the state.

In places like SPRA where invasive species are widespread and are the dominant vegetation in areas, it is critical to appropriately manage them before and/or after timber sales to ensure that the resulting habitat meets long term goals. Forest conversions at SPRA will only be completed once there is a plan, as well as adequate staff and resources in place to complete the conversion to other desired habitats. Depending on
the situation, this may involve treatment of the understory prior to or shortly after a timber harvest. The Department’s intent is to avoid replacing productively growing timber with dense stands of invasive plants.

**Bio-fuel Harvests**

Harvests of non-commercial timber, brush and herbaceous vegetation, intended for use as biomass, may be used to restore and maintain habitats. The Department may combine bio-fuel harvests with forest product sales to improve the economic value and feasibility of the harvest. Bio-fuel markets and demand will determine the cost-effectiveness of using this management action to achieve habitat management goals.

**Fire**

All prescribed fires will follow the protocols described in the DNR’s Prescribed Burn Handbook (4360.5). Generally, fire will be used on a rotating basis in various-sized management areas. The frequency and size of the prescribed fires will be based on site conditions and regional and property priorities. Although it is anticipated that some portion of SPRA would be burned each year, the scheduling of fires is dependent on weather and the availability of staffing and may not actually occur every year.

The DNR’s intent is to conduct prescribed fires at frequencies that successfully invigorate native species and set back undesirable species. Prescribed fires will be used where adequate residual vegetation is present to sustain fires hot enough to be successful. In some areas where grassland and oak opening restoration is proposed, there currently isn’t adequate herbaceous material present to sustain productive fires. As desired or feasible, the Department may seed these areas to develop an adequate mass of herbaceous vegetation to hold a successful fire. Fires will generally be conducted in the spring and fall. Early spring (generally prior to late April) and fall burns tend to favor forbs. Late spring burns (generally late April to mid-May) are best for stimulating warm season grasses and controlling cool season grasses and brush.

Prescribed fires in oak woodland habitats are designed to burn shrubs, small saplings, and woody debris and typically are not as hot or intense as in more open habitats such as oak openings or grasslands. Fires will generally be conducted in the spring and/or fall and would, ideally, occur almost annually for the first 5-10 years during the “restoration” phase and 2-3 times over a 10 year period during the “maintenance” phase.

Fires are not permitted on the landfills or other capped areas because they result (temporarily) in bare soil conditions which could make them susceptible to erosion. 24

**Pesticide use**

Herbicides will be applied where they can be effective at controlling target plant species, particularly following mechanical cutting. In most cases these will be spot treatments (e.g., on stumps or on localized outbreaks of nuisance plants). Occasionally, herbicides may be used on large blocks to kill existing vegetation to facilitate re-planting. They may also be applied broad scale following late spring burning, where they can be effective in controlling grasses such as reed canary or smooth brome grass (refer to the document, “Reed Canary Grass Control Methods in Herbaceous Wetlands” by the Wisconsin Reed Canary Grass Task Force). The chemicals used and the application process will follow the protocols described in DNR Manual Code 4230.1.

In addition to use of herbicides by Department staff, application of herbicides and insecticides may occur as part of farming operations on SPRA under an agreement with the Department.

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24 The Army is responsible for the management of all seven of the capped areas on the SPRA.
Grazing

Grazing has proven to be an effective management tool to reduce shrubs and invasive weeds at several public properties in Wisconsin. In particular, goats’ dietary preference for shrubs and woody material has been successfully used to remove undesirable vegetation. Scientists at the UW-Madison have been conducting research in collaboration with DFRC on some of their lands. The researchers grazed goats in paddocks infested with invasive shrubs and other weed species.

In addition, fall mowing of shrubs followed by spring cattle grazing has shown to be very effective at suppressing brush at properties in central Wisconsin. Light to moderate grazing (season-long) with cattle can also be an effective tool for the long-term maintenance of moderate- to short-height grassland vegetation structure preferred by a number of grassland bird species. Typically this level of grazing is equivalent to one or two average-weight beef cattle per two acres. Managed intensive rotational grazing, done in a “bird friendly” manner with ungrazed refuge paddocks, can also provide some habitat for grassland birds. As grazing was a historical land use prior to the construction of the BAAP, having some permanent “bird friendly” pastures at SPRA could combine the use of conservation farming practices with educational opportunities.

Although more research is needed to improve and better understand the factors that drive different habitat outcomes (e.g., type of animal, stocking density, sequencing different types of animals, duration of grazing periods, etc.), grazing appears to be well-suited to the habitat management needs at SPRA. Grazing may be used where conditions are appropriate and could include goats, cattle, or other species. Goats would be contained primarily using temporary fencing while larger animals typically require more permanent fencing. Paddocks would be of various sizes (potentially 10 to 300 acres) and could include both temporary and permanent grazing sites.

Grazing will typically start in May and run into October. Depending on the types of animals involved, it may be appropriate to close the portions being grazed to public use. In these cases, affected trails would be temporarily re-routed as needed and feasible. Apart from Building 207, there are no potable water sources currently on the property. As such, grazing operations would have to address this need. In addition, many of the fences that remain are in poor condition.

In collaboration with local graziers, DFRC, UW researchers, and other grazing experts, the Department will develop a more detailed grazing plan after the master plan is approved. This plan will address the locations and rotation of grazing paddocks, desired habitat outcomes, water sources, fencing, ways that impacts to public use will be mitigated, monitoring of soil or vegetation, and other topics as appropriate.

The Wisconsin Department of Health Services undertook an evaluation of the bioaccumulation through the terrestrial food chain of contaminants of concern that could potentially lead to a health hazard for people who consume animals from the property (animals used in grazing as well as game animals). The evaluation applied a set of assumptions that are more conservative than are ever likely to materialize. For example, one assumption was that animals would spend 100% of their time at SPRA; in reality, for cattle or goats grazing on the property for habitat management purposes, the animals would only be on the property from late spring to the fall and the individual cattle and goats on the property may differ from year to year. Another assumption was that the level of soil contamination was at the maximum allowable threshold considered to

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25 The Department of Health Services sent a letter (May, 2013) to the DNR summarizing the human health assessment of the consumption of animals harvested from the SPRA. The letter and appendices are posted on the DNR’s SPRA website.
be remediated and that this level existed uniformly across the entire property, which is not the existing situation.

The conclusions of the DHS report, incorporating the conservative risk estimates, indicated that:

- Regular consumption of agricultural grazing animals with a high percent fat content (e.g., cattle and sheep) from SPRA may pose a human health risk to both children and adults.
- Regular consumption of agricultural grazers with a lower percent fat content (e.g., bison and goat) from SPRA is unlikely to pose a human health risk to either children or adults.

The report notes that the elevated risks calculated for cattle and sheep are likely improbable given the difference between the assumptions and actual conditions on the property and people’s eating habits. As a further precautionary measure, the Department will require that cattle (or other grazing animals with similar fat content) spend no more than two months a year in the Settling Ponds area (MA5). In addition, the Department will provide educational information to graziers on the soil contaminants of concern present at SPRA and their potential for bioaccumulation in animals that graze on the land.

**Late season haying**

Late season cutting and baling of hay or grasses (generally, after August 1) will be used where conditions are considered appropriate to provide useable habitat for nesting grassland birds and suppress the growth of shrubs and tree seedlings. Haying typically would not continue after the end of August to allow some regrowth prior to the onset of winter.

**Bio-control**

Biological control refers to the use of animals, fungi, or diseases to control invasive populations. Control organisms usually come from the native range of the target species, and require a period of study to ensure that they will remain specific to the target population, and will not harm native species, crops, or other desirable ornamental species. Bio-control agents require both federal and state permits for their use.

Biological control typically does not eliminate the invasive species, and usually takes several years to show results. However, biological control has been effective for some species. Examples include the *Galerucella* beetle which has been used with some success to control the European perennial purple loosestrife (*Lythrum salicaria*), and *Larinus* sp. weevils for control of Spotted knapweed (*Centaurea biebersteinii*).

Grazing animals can also be utilized as biological control agents. For effective control, grazing may need to be used multiple, consecutive years, generally during the rosette (early growth) to early flowering stages, sometimes with multiple treatments per year. This practice is best used as part of an integrated pest management plan including manual, mechanical, or chemical controls. See “Grazing” above.

**Grading, excavation, and soil improvement**

As needed, areas may be graded to flatten berms, fill in ditches, remove rubble, or restore topographic relief. Soil improvement efforts will reflect both the degree of past disturbance as well as the availability of resources. In some places the Department may seek to remove various types of rubble or may add topsoil (from local sources) to improve long-term habitat outcomes. In other areas, sandy or rubble deposits may be left to support sand barrens vegetation and associated species.

In some places ditches may be filled and drainage tiles broken to aid in wetland restoration efforts. Wetlands and depressions that have filled in with sediment may be excavated. Wetland basin catchment areas for
Seeding and planting

Depending on the conditions, areas may be planted with grassland species using seed drills, hand broadcasting, or other methods. In some areas with weed infestations, cropping fields for several years will help reduce the soil seedbank of weeds, after which grasslands can be seeded. In other areas, burning followed by inter-seeding of native grassland species may be used.

In some areas, oaks (bur, white, and red) and other native trees that are associated with oak opening and oak woodland habitats may be planted. Trees will be planted using machines or by hand, depending on the material planted. In some cases, trees may be transplanted from undesired to desired locations within the property.

Cropping

Where appropriate, the DNR may rent or lease SPRA land for crops to DFRC or local farmers. Cropping can help prepare the site for the future planting of grassland species (see above). Depending on the interest from DFRC or local farmers, tillable lands on SPRA could be used to grow corn, soybeans, alfalfa, wheat, oats, or other crops and small grains. To minimize the establishment of weed species, the Department will seek to rotate fields through a series of different crops (and their respective herbicide treatments) immediately prior to planting with grassland and prairie species.

Vegetated buffers and runoff reduction

Where possible, wetlands will be surrounded by a 100-foot buffer zone of vegetation to reduce the amount of storm water runoff from entering.

Alum treatments and pond vegetation

Some ponds may require treatment with alum to reduce algal blooms, and improve water quality. This will be followed with a plan to plant native lacustrine emergent, submersent, and floating-leafed aquatic plants.
3. PROPOSED RECREATION AND HABITAT MANAGEMENT, BY MANAGEMENT UNIT

In this section of the master plan, proposed management objectives and actions are presented by the different units of the property. The intent here is to enable readers to see how the habitats, recreation facilities, and cultural resources will be managed together in each part of the property.

Much is proposed to be accomplished in this master plan. From a habitat perspective, it will take decades of management to restore many places on the property. Initial efforts will focus on slowing the spread and adverse impacts of invasive species. Of particular concern is the conversion of many areas from surrogate grasslands to invasive shrubs such as honeysuckle, autumn olive, and multiflora rose. Woodlands are also being infested, primarily with buckthorn. As such, the Department proposes to initially work on conducting prescribed burns, brushing, herbicide treatments, and other actions in areas where it is still possible to return to surrogate conditions with reasonable effort. Areas that are too degraded will be deferred. It is the Department’s hope that following this “triage” approach will result in the best outcomes given limited staffing and funding.

It will likely also take many decades to fully develop the recreation facilities and opportunities described here. Initially, this plan calls for using many of the former roads as trails for biking, horseback riding, cross country skiing (un-groomed), and hiking. Over time, new trails will be constructed and many of the roads will removed.

Figure 8: The view from the reservoir site looking southeast over the TNT production area, which was never completed. The buildings were torn down to use the materials for construction of the Rocket Area built in 1944.

Badger History Group archives
a. Gateway Corridor

Existing conditions

This 254-acre unit comprises a band of connecting parcels from USH 12 into the main part of the property. Much of the far western portion of this unit was heavily developed with various administrative and storage buildings and although nearly all the buildings have been removed, the corridor is considerably disturbed. The western portion of the unit lies on the outwash plain and is flat with a slight slope upward as one travels east. The eastern end of this unit includes part of the terminal moraine and rises high enough to provide good views northwest across the open grasslands on the parcels owned by the HCN as well as the Baraboo Hills. The existing vegetation is patchy, sparse, and comprised mostly of non-native, weedy grasses and forbs in the west portion and shrubs, early successional forest (primarily box elder with some black cherry and oaks), and about 19 acres of pine plantings in four spots in the east portion.

Given the narrow and somewhat convoluted shape of the corridor, the habitat value of the corridor is especially dependent on surrounding lands, particularly the HCN lands to the north. No occurrences of any plant species of conservation or management concern are known to occur in this unit. Rare grassland birds have been recorded in the vicinity and may utilize habitat here, although given the narrow orientation of this unit the ecological value here is directly affected by the management of adjacent lands.

Four buildings, all on the western side, remain in this unit – Building 207, two Quonset huts, and an open-sided storage building (approximately 30’x60’). Building 207 currently houses offices and display space for the Badger History Group. With the transfer of the property to the state, the building is now required to meet access standards established by the Americans with Disabilities Act if it is open to the public. The building does not meet the required ADA standards; in addition, it suffers from some operational and structural limitations. The building is currently closed to the public.

The Quonset huts and storage building are in marginal but functional condition. The DNR does not have a use for the open-sided storage building, which was designed to store flammable gases. A small shed that houses the Bluffview drinking water well is located on a one-acre parcel (R2), which is owned by the Bluffview Sanitary District. This parcel is surrounded by DNR-owned land. Five concrete pads (approximately 20’x150’) as well as several concrete footings remain in the eastern portion of the Gateway Corridor.

As the primary entryway into the main part of SPRA, this corridor provides an opportunity to showcase and explain to visitors some of the habitat management techniques that they may see throughout the property (e.g., grazing with different animals, prescribed fire, plantings, and late season haying).

The Department is currently evaluating broader staff office and equipment storage needs in Sauk County. One option might be to consolidate staff offices that are currently widely dispersed into a central location and also store a range of vehicles and equipment associated with habitat management and law enforcement activities. The portion of SPRA near USH 12 provides an opportunity to construct a facility to meet these needs as well as potentially house archival material from the Badger History Group. If the Department
pursues construction of this sort of building at SPRA, it will follow the necessary steps to receive a variance to this master plan.

Discussion of the proposed management

The primary long-term objective for this unit will be to provide an attractive entryway into the property and to showcase different restoration and management techniques that visitors will see elsewhere on the property. The Department will coordinate with the HCN and DFRC on potential interpretive displays along the entryway. Given that this unit is heavily disturbed and will require significant amounts of work to restore, habitat management efforts will be minimal here until a proposed visitor center is built.

The Department will work with the HCN and DFRC to identify an acceptable route into the main part of SPRA and develop necessary legal agreements to allow public access. Improvements to the existing roads to create a modern, paved, two-way road with an extended shoulder for bike and pedestrian use will be made as funding is available.

DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT GC1

A property sign and a kiosk explaining recreation opportunities will be installed along with a small, 6-car parking lot at the main entrance on USH12. Building 207 will serve as temporary management headquarters for the property and house the museum for the Badger History Group. Currently this building is closed to the public and will remain so until improvements can be made to meet current public building standards. The Department and the BHG are working together to identify funding for this purpose. The long term plan is to remove Building 207 and replace it with a visitor center elsewhere on the property.

The Department will use the Quonset huts for storage as long as they remain functional and will remove the open-sided storage building when funds are available.

Until the visitor center is built, habitat management efforts in this sub-unit will be limited to maintaining the existing open aspect and treating the shrubland in the southwestern portion, possibly using grazing. When the visitor center is constructed (potentially in 8 to 10 years) the Department may use the entry corridor to showcase and explain different restoration and management techniques. Potential management examples include grazing systems, prescribed fire, brush cutting, late season haying, biomass harvest, and other innovative conservation farming methods.

DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT GC2

A new visitor center is proposed to be constructed in the vicinity of locator points “10 S” or “11 S” and may be located in GC2 depending on the location of the access road into the main part of the property. Further information about the proposed visitor center can be found on page 22.

From a habitat perspective, this sub-unit will be managed primarily for oak opening habitat. The pine plantations will be managed (some pines may be retained for educational purposes or for a picnic area associated with the visitor center) and the existing shrub and early successional forest will be thinned. The few remaining oaks and large specimen trees (e.g., cottonwoods) will be left to facilitate the restoration to oak opening habitat conditions. White and bur oaks will be planted as needed.

Some of the only remaining physical structures of the plant on SPRA (concrete bases of metal rest houses) occur in this sub-unit near where the visitor center may be located and could be incorporated into interpretation of the area. For more discussion on the management of cultural and historic resources here, see page 80.
Summary of proposed recreational use and facility development

OBJECTIVES:

- Work with the Ho-Chunk Nation and DFRC to identify a route, using existing roads to the degree possible, into the main portion of the DNR land. Potentially enter into agreements with the HCN or DFRC as needed to allow public use of this road.

- Develop a visitor center near locator points “10 S” or “11 S” (and potentially in GC2) that offers interpretive wayfinding opportunities, display space for the Badger History Group and others, and potentially limited office space for Department staff and a small meeting space.

- Develop interpretive opportunities along the entry road that provide visitors background information about the property and the types of management they are likely to see on the property.

- Evaluate the possibility of constructing a building near USH 12 for DNR staff offices and equipment storage and secure storage for Badger History Group’s archival materials. If deemed necessary and feasible, submit a building proposal in the state capital development process.

PRESCRIPTIONS:

i. Near-term Prescriptions (0-15 years)

- Improve existing entryway road and build new sections where necessary. This road will have an extended shoulder for bike and pedestrian use. Plow during the winter.

- Construct a visitor center near locator points “10 S” or “11 S.” Develop the grounds around the visitor center with parking, picnic area, outdoor informational displays, potential orchard, and other features.

- Construct interpretive displays for placement along entry road and at the visitor center.

- Determine if construction of a central staff building and storage facility is warranted and feasible. If so, submit a request through the building plan process.

ii. Longer-term Prescriptions (16-50 years)

- Remove Building 207.

- Potentially construct a building near the USH 12 entrance that houses DNR staff and provides equipment storage as well as storage for the archives of the Badger History Group.

SUMMARY OF AUTHORIZED FACILITIES:

- Building 207 – necessary improvements to allow public access will be made and parking lot resurfaced.
- New visitor center, parking, and associated facilities.
- Staff office building and equipment storage.
- Property entrance sign.
- Six vehicle parking lot at USH12 main gate.
- Two-way road – 2.3 miles.
- Bike/pedestrian path.
- Habitat management demonstration with interpretive signs or roadside stations.
- Existing Quonset huts.
Summary of proposed resource management and protection

OBJECTIVES:

- Provide a visually attractive setting for the main entrance into the property by restoring and maintaining grassland (western portion of the unit) and oak opening habitats (eastern portion) that are dominated by native species.

- Maintain and enhance grassland and oak opening habitat through the use of a variety of active management techniques.

- Use the entry corridor as a place to showcase and demonstrate pre-settlement grassland and oak opening habitats as well habitat management techniques.

PRESCRIPTIONS:

i. Near-term Prescriptions (0-15 years)

- Around 2023, thin the largest block of white pine plantation (approx. 6.5 acres) to improve growing conditions for remaining trees.

- Remove trees in far northern part of GC2 to improve open aspect connecting the grasslands in the Rocket Area and HCN lands.

- Thin the woody and shrubby area along the eastern side of this unit to create an oak opening structure. The thinning of trees in the eastern end should leave oaks and some black cherry trees.

- Remove invasive species such as multiflora rose, autumn olive and spotted knapweed and promote some scattered establishment of oaks.

- Plant white and bur oaks in GC2 to begin conversion to oak opening habitat.

- Based on opportunities and funding, plant an orchard of fruit trees at the visitor center site using varieties that had been grown on the BAAP by the former residents.

ii. Longer-term Prescriptions (16-50 years)

- Improve soil conditions of highly degraded lands to the degree practical.

- Restore approximately 175 acres of native grassland habitat in GC1 to provide wildlife habitat, especially for birds. Plant a diversity of prairie grasses and forbs.

- As part of this restored native grassland, potentially establish a series of demonstration sites showing different habitat management techniques including grazing systems, prescribed fire, brush cutting, late season haying, biomass harvest, and other innovative conservation farming methods. Provide interpretive displays along the entry road.

- Remove invasive species such as multiflora rose, autumn olive and spotted knapweed and promote some scattered establishment of oaks.

- Harvest any remaining pine plantings when they reach maturity.

- Continue restoring oak opening around the proposed visitor center (if in this unit).
SUMMARY OF LAND COVER:

<table>
<thead>
<tr>
<th>Land cover</th>
<th>Current amount (acres)</th>
<th>Desired amount in 15 years (acres)</th>
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Summary of proposed cultural and historic resource management and interpretation

The entry corridor provides an opportunity to explain to new visitors the natural and social history of the site, its national significance, and what they will (or will not) see in the other portions of the property.

Topics for interpretation in this unit include:
- habitat management methods,
- overviews and pictures of the entire BAAP, and
- explanations of the former uses of this area (administration and nitro-cotton and Ball Powder production).

When the visitor center is built, it will be the focal point for interpretation and for visitors to plan their outings on the property. For more discussion on the management of cultural and historic resources here, see page 80.

Land management classification

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</tr>
<tr>
<td><strong>TOTAL</strong></td>
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</tr>
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b. Bluff Vista

Existing conditions

This 250-acre unit has a complex geology and exhibits the greatest topographic relief of the entire property. Resting on the south flank of the quartzite Baraboo Hills and bordering the south edge of the South Bluff State Natural Area of Devil’s Lake State Park, this unit descends southward with a vertical drop of 240 feet to the outwash plain and former prairie. The steep drop down the slope is interrupted by two large reservoirs, totaling 10 million gallons, which provided water for the ammunition plant. They were constructed by excavating a large quantity of quartzite and sandstone and depositing the rubble in broad, fan-shaped piles to the south, east and west of the reservoirs (see the photo on page 14).

The reservoir site provides impressive views to the south over of the BAAP, the Johnstown Moraine and entire former 14,000-acre Sauk Prairie on the outwash plain, the Wisconsin River valley, Ferry Bluff, and Blue Mounds (25 miles away). Highly significant geological features are exposed around the reservoirs, including an excellent example of a cobbly Cambrian beach with impact-marks from rocks in the subtropical surf, and other boulders that were scoured by silt-laden winds that descended from the nearby edge of the Pleistocene ice sheet.

The East Reservoir contains a rare, fishless pond ecosystem with 1,200 neotenic eastern tiger salamanders that live their entire lives and breed here in a larval form. The salamanders have contracted a virus and potentially other diseases that apparently do not occur in the local salamander population. As a result, the neotenic individuals cannot be released back into the wild. For more information on the management of the salamanders, see page 39.

This unit also straddles the Johnstown Moraine. The unglaciated western section is characterized by large quartzite boulders and rock outcroppings that support overgrown examples of oak woodland and bedrock glade natural communities. Northern red oak, red maple, black cherry and elm are the dominant tree species. The glaciated eastern section has less extreme topography, including the broad, low moraine and a natural kettle pond (wastewater from the production of sulphuric acid was drained into this pond for many years and it is likely that water levels were elevated in the past as a result).

At the base of the main slope and spoil piles are two shallow spring-fed ponds that were excavated in the late 1990s and which drain westward onto land slated for the Ho-Chunk Nation and into the ditch network. At times of high water, the ditches drain west under USH 12 into Otter Creek. An intermittent stream, originating from the South Bluff of Devil’s Lake State Park, passes through meadows and beaver ponds, then enters SPRA and runs across this unit in a northeast to southwest orientation. It is dammed by berms and the former railroad bed to form a woodland pond, and then drains into the soils below the spoil area and into the network of ditches, most of it seeping into the outwash plain.

Prior to Euro-American settlement, this unit was characterized by savanna and glade communities—a transition between the grassland (on the outwash plain) and oak opening (on the moraine) below and the oak woodland of the South Bluff of Devil’s Lake above. Just prior to construction of the ammunition plant, it was a combination of pastured oak openings and woodlands in the sloped areas, open to semi-wooded pasture on the less extreme slopes above, and cropland at the base of the slopes. Since 1942, pines have been planted (and some since harvested) in some areas, while most open and partially wooded pastures have succeeded to woods. In recent years native and non-native shrubs have invaded almost the entire area. The massive piles of rocky spoil created in 1942 are now entirely vegetated, primarily with trees.
Much of this unit was identified in the Rapid Ecological Assessment as a Primary Site (SPRA Baraboo Hills Woodland). The significance of the site is that it creates a transition between the highly-significant forests of the Baraboo Hills and South Bluff/Devil’s Nose State Natural Area and the savanna habitats of SPRA’s Northeast Moraine unit, as well as the expansive grassland on the land being transferred to the Ho-Chunk Nation. The opportunity exists to manage a significant portion of this unit as oak woodland and oak opening as part of this transition. If the canopy over the rock outcroppings (and possibly some of the rocky spoil area) on the unglaciated slope are opened, they could provide important glade habitat for a number of herptiles (particularly snakes).

**Discussion of the proposed management**

Vehicle access to the unit will be upon a three-season paved one-way road approximately 1.85 miles in length. The southern 0.50 mile segment will be a paved two-way road offering potential access to the Pioneer Cemetery on HCN lands. The fence separating SPRA and DLSP will be removed when funds are available. When the exterior fence between SPRA and DLSP is removed, the existing snowmobile trail will be slightly re-aligned to provide an improved route in the exterior road corridor over to Burma Road.

Given the topography present, this portion of the property may be able to support mountain biking trails. However, in order to provide enough miles of trail to provide a high quality experience, it will likely be necessary to also site trails on adjacent DLSP lands. As such, the Department will postpone development of mountain biking trails at SPRA until they could be integrated with the DLSP master plan. Although there is significant topography here (and up into DLSP) that could make for high quality mountain biking trails, the thin soils and rock outcrops may make it difficult to site a trail network that has minimal impacts to vegetation and soil erosion. In addition, a trail network here would need to ensure that there are not significant impacts to the ecological values of the South Bluff/Devil’s Nose State Natural Area.

The reservoirs will eventually be drained, razed, and filled in. The reservoir area will be closed to the public until the structures are razed or otherwise secured.

The Bluff Vista unit will be managed as part of the transition from the heavily forested Devil’s Lake State Park to the open grasslands below on the HCN lands and the oak opening of the Northeast Moraine. The primary management required to recreate the dynamic transition from grassland and oak opening to the woodland of the South Bluff is to remove non-native invasive shrubs, open much of the canopy—leaving primarily scattered oaks, hickories and (at the base of the slopes) cottonwoods—and re-establish a fire regime. A thinning harvest is scheduled in 2019 for about 80 acres in BV1. The shrubs and overstory trees shading the glades will be removed to improve conditions for reptiles.

Some areas currently in grass, oldfield and shrubs will be planted with white and bur oaks (e.g., the grassy perimeter strip, former Oleum Plant, the fields at the east perimeter, the meadow adjacent to the Oleum East kettle pond, and the low open area east of the Kerns Corner ponds). Sites identified as potential (and probably former) glades will receive special attention to encourage re-establishment of native vegetation.
DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT BV1

The canopy will be opened throughout the sub-unit to create oak opening and bedrock glade conditions and oak woodland where there is some natural protection from fire. Following the thinning of the forest, prescribed fires will be used to encourage the growth of understory grasses and forbs.

Currently, the stream that emanates from the northeast and is directed into a system of ditches mostly seeps into the sandy ground of the outwash plain, though in times of high water it flows farther westward and contributes to chronic flooding of Otter Creek. The Department will work with the HCN to develop and implement appropriate plans to re-establish the natural hydrology and allow water to flow out onto the grassland and soak into the outwash plain. This will alleviate flooding of Otter Creek, create diversity within the grassland (adding temporary ponds and areas of hydrophilic vegetation), and restore a rare example of natural hydrology among streams exiting the Baraboo Hills.

The ponds at the “Kern Corner” (locator point “4 S”) provide a good waterfowl and shorebird watching opportunity. Interpretive signs will be placed explaining both their creation and commonly seen plants and wildlife. Additional interpretive opportunities include hydrologic restoration of the streams flowing off the South Bluff, the woodland to grassland transition, daily life on the nearby former farmsteads, and plant operations. For more discussion on the interpretation of cultural and historic resources here, see page 80.

A modern day use area will be developed at the reservoir site and offer a number of improvements to support recreation and interpretation. A paved parking lot for up to 50 vehicles\textsuperscript{26} will be constructed along with a 20’ x 30’ open-sided shelter and vault toilet. This parking area, which will be located where the existing reservoirs are, will also provide access to a trailhead offering biking and hiking opportunities connecting Devil’s Lake State Park with SPRA. Two trail connections will be established to Devil’s Lake: one for on-road bikes (that will connect via Burma Road) and one for hiking. As mentioned before, a mountain biking trail connection into DLSP might also be developed later depending on the outcome of a revised DLSP master plan.

An overlook deck offering open-air style seating for teaching and lectures will also be built at the reservoir site. The deck will include a series of interpretive panels highlighting the glacial and geologic features evident at the reservoir site as well as history of the propellant plant, ecological transitions, and different aspects of the viewshed. A small amphitheater, similar in size and design to the newly installed amphitheater at Mirror Lake State Park, is also proposed here. One option could be to use quartzite blocks in building the amphitheater, similar to the way that limestone blocks were used at Mirror Lake. Much of the woody vegetation will be removed where it blocks the southward view from the reservoir area.

Interpretation of the reservoir area will include the Cambrian beach area as well as the boulders that were pitted by the powerful, silt-laden winds flowing off the glacier. The day use area will be classified as a Type 4 recreational use setting.

The Department expects that the day use area at the reservoir site will likely be the most visited part of SPRA. Given its proximity to the South Bluff/Devil’s Nose State Natural Area and its importance in managing the continuum from forest to oak woodland and oak opening, the Department will seek to restore the area where the reservoirs are sited and develop the day use area to complement the long-term ecological goals here. Although invasive species, in particular garlic mustard, are prevalent in the general

\textsuperscript{26} A 50-vehicle parking lot would require about 1/3 of an acre. The reservoirs are over 2 acres in size.
vicinity, the Department will seek to ensure that public use of the area, as well as on the trails originating from the site, do not significantly worsen the spread of invasives.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT BV2**

This sub-unit will be thinned to reduce tree density. Around 2025, the white pine plantation will be thinned to improve growing conditions for remaining trees. The remaining trees will be harvested when they reach full marketable size. The wetland and small pond area will be passively managed.

The small former building site in the southwest corner will be restored to oak woodland conditions over time.

**Summary of proposed recreational use and facility development**

**OBJECTIVES:**

- Provide one of the key destination sites on the property that takes advantage of the vistas over SPRA and the surrounding landscape. Use the spectacular views here as a primary setting to provide interpretation of the property’s geologic, cultural, and human history.

- Provide recreational connections to DLSP.

- Provide a trailhead for hike and bike trail connection to the rest of SPRA and DLSP.

- Offer interpretive wayfinding opportunities.

**PRESCRIPTIONS:**

i. **Near-term Prescriptions (0-15 years)**

- Develop a modern day use area at the reservoir site that provides visitors with views of the property, Wisconsin River valley, Blue Mounds and other features. Construct an overlook deck offering open-air style seating for teaching and lectures about the history and landscape of the area. An amphitheater offering a gathering space for interpretation and events will be built within walking distance of the parking lot. In addition, a 20’x30’ open-sided shelter, vault toilet, and a paved parking lot for up to 50 cars will be constructed.

- Construct approximately one mile of hiking, one mile of recreational biking, and one mile of snowmobile trails. Make appropriate connections between DLSP and SPRA.

- Build up to two miles of new mountain biking trails if connecting trails are authorized in a revised DLSP master plan.

**SUMMARY OF AUTHORIZED FACILITIES:**

- One-way paved road up to reservoir, two-way paved road elsewhere.

- Trailhead.

- Parking lot – up to 50 vehicles, paved.

- Open-sided shelter – 20’ x 30’.

- Overlook deck.

- Open-air amphitheater.

- Vault toilet.

- Up to one mile of bike trails (along the shoulder of the road up to the overlook or new off-road trail).

- Up to one mile of lightly and moderately developed hiking trail.
• Part of the snowmobile trail from the southern boundary of SPRA to Burma Road.
• Up to two miles of narrow, single-track mountain biking trail if part of connected trails in DLSP.
• Interpretive kiosks and signs.

Summary of proposed resource management and protection

OBJECTIVES:
• Provide a seamless transition from the forest and oak woodland habitats in DLSP to oak woodland and oak opening habitats in the Northeast Moraine.
• Restore and manage the bedrock glade communities to benefit native species, particularly reptiles.
• Restore the hydrology of the headwater streams that flow off the South Bluff.

PRESCRIPTIONS:

i. Near-term Prescriptions (0-15 years)
• Restore the slope to a dynamic mosaic of oak-hickory oak opening and woodland that is continuous and transitional with the grassland and oak opening to the south, and the forests of the broad quartzite bluff to north. Remove trees that block the southward view from the reservoir site.
• Restore the natural hydrological regime so that water that drains off the quartzite bluff flows out into the prairie (and seeps into the sandy soil), with associated permanent and temporary ponds and wetlands.
• Maintain the ecological values of the Baraboo Hills Woodland Primary Site. Restore the oak woodland and oak opening habitats of the site. Address non-native invasive woody vegetation, and prevent its re-establishment.
• Manage the white pine stands using standard forest management methods.
• Evaluate options for managing the spoil piles so they contribute to the transition between grassland, oak opening and oak woodland.
• In collaboration with the Ho-Chunk Nation, evaluate methods of restoring natural hydrology and stream course, and appropriate engineering of the east-west road that runs along the south boundary of the unit, to allow for migration of aquatic species.

ii. Longer-term Prescriptions (16-50 years)
• Continue to manage a dynamic mosaic of oak-hickory oak opening and woodland that is continuous and transitional with the grassland to the south, and the forests of the broad quartzite bluff to north.
• Further develop oak opening and woodland in sub-unit BV1 and expand these habitats throughout remainder of unit.
• Manage the unit in a continuum with grassland - oak opening below and woodland above, with no sharp boundaries in structure or management in either direction. Coordinate management with adjacent lands in Devil’s Lake State Park.
• Evaluate pine plantations and plan for their management and eventual removal. Some white pines may remain for their full life span as biological legacies.
SUMMARY OF LAND COVER:

<table>
<thead>
<tr>
<th>Land cover</th>
<th>Current amount (acres)</th>
<th>Desired amount in 15 years (acres)</th>
<th>Desired amount in 50 years (acres)</th>
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Summary of proposed cultural and historic resource management and interpretation

The overlook area provides an exceptional opportunity to educate visitors about a wide variety of natural and human aspects of the BAAP site and the surrounding landscape. With the entire property in view, a series of images (displayed on boards or on electronic devices such as tablets or phones) could convey what the site looked like in pre-settlement times, during the farming era, at different points in time during the BAAP’s construction, operation, deconstruction, and a vision for future conditions.

In addition, the overlook provides a unique opportunity to describe the ecology and geology of the Baraboo Hills, the Wisconsin River valley, and the Driftless Area.

The Department proposes to incorporate a series of display panels in this unit including at the overlook, next to the bluff showing the ancient Cambrian beach and the pitted boulders, as well as potentially other spots.

Land management classification

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c. Northeast Moraine

Existing conditions

This large block is noted for its rolling topography and mix of open grasslands and wooded areas that provide ample opportunities for high quality recreation experiences, particularly trail-based activities. Overall, this approximately 1,200-acre unit was relatively undeveloped during the construction and operation of the plant. As such, this unit provides some of the best opportunities at SPRA to accomplish significant habitat management objectives without having to engage in more intensive habitat re-creation.

The undulating topography resulting from the glacial moraine provides a range of microclimate conditions that likely supported oak openings with varying tree densities prior to conversion to farmland. A sizable portion of this unit was cropped and pastured through the 1950s and 1960s. More recently, the area was the focus of conservation and prairie restoration efforts with approximately 150 acres planted in the 1990s with switch grass (from South Dakota) and other grasses and forbs. Current vegetation is a mosaic of surrogate grassland, upland shrubs, young forest dominated by early succession species including green ash, elm, cottonwood, box elder, conifer and walnut plantations, and some row cropping.

A low undulating swale with some wetland depressions and a small pond (sometimes referred to as the “duck pond”) is found along the southeast portion of this section. Sixty years ago this area was almost entirely open with a few large scattered trees; today it is largely wooded.

Small, scattered areas of conifers and walnuts were planted in several places in the Northeast Moraine between 1955 and 1987. The red pine stands are typically younger and are pole to small sawlog in size, the walnuts stands are small sawlogs, and the white pine stands have small to large sawlogs.

The portions of this unit that have been significantly altered include the “Nitro” area (which still contains a set of storage bunkers that may be used as bat hibernacula in the future), a landfill in the northeastern part, the Deterrent Burning Ground (which has been remediated and capped to address further groundwater contamination issues), and an approximately 25-acre excavation area (borrow pit) where a large amount of material was removed to cover and shape the main landfill. This site has been graded and the sides smoothed out. In addition, there is a storage shed (approximately 100'x300') located in the western end on NM2.

Discussion of the proposed management

The proposed Great Sauk Trail would run along the western and northern border of this unit. This portion of SPRA will be managed primarily to provide trail experiences including hiking, biking, horseback riding, cross country skiing (un-groomed trails) and snowshoeing. To the degree practical, most of the trails will be designed to move between open grasslands and areas with more trees and will take advantage of the hilly terrain. A total of up to six miles of biking trails will be constructed in this unit as funding and labor are available. In addition, up to seven miles of equestrian trails will also be constructed. Although these trails may share the same corridors in some places, the intent is to provide separate trail networks to provide desired experiences for each user group and to minimize conflicts. Where biking and horseback riding occur on the same trail, the Department may route users in opposite directions for safety reasons. The locations of these biking and horseback riding trails are generally depicted on Map F; the actual locations will be determined in the field.

A snowmobile route will be located either near the perimeter along the eastern side of this unit or along the GST and continuing up along the Bluff Vista unit. A hiking trail from the visitor center up to the overlook at the reservoir site will traverse this area. In addition, shorter loop hiking trails may be established here.
Until the trails are built, approximately 5 miles of the former road network in this unit will be used as trails for both biking and horseback riding. Although some of these roads are wide and straight (and thus of moderate value from a trail perspective), others are narrower and more meandering. The Department believes all these roads are wide enough with adequate sight-lines to accommodate both biking and horseback riding concurrently. Surfaces are a combination of gravel (in some cases with rather large aggregate) and asphalt that is generally in poor condition, but serviceable for biking and horseback riding. A horse trailer parking lot for up to ten trailer rigs, along with room for six cars will be constructed near locator point “21 M” in NM7 along the southern border of the Northeast Moraine. This site will be a designated use area and will include a corral, hitching posts, 20’x20’ open-sided shelter, and vault toilet. Potable water will not be initially provided but may be available later if water lines are installed in SPRA as part of a new municipal system.

From a habitat perspective, the Northeast Moraine will be managed primarily as a large oak opening with varying tree density. Pockets of open grasslands, oak woodlands, and a small number of ponds and associated wetlands will be present. The initial priorities will be to harvest the pine plantations that fragment the open grassland and shrublands and to reduce the shrubs and young trees (except oaks) that are invading the grasslands. In some areas oaks will need to be planted to facilitate the restoration of oak opening and woodland habitats.

In the course of restoring this area, there may be opportunities to return some portions to row crops or other farming systems for a limited number of years as a means to reduce non-native invasive species and prepare soils for replanting to native species.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT NM1**

Most of this management sub-unit lies at the very edge of the outwash plain and is generally flat. This area, part of which was a rail yard, is heavily infested with invasive plants and will be treated using techniques described in Chapter II.B.3. The intent of this sub-unit, bordered by the Great Sauk Trail and a primary north-south road, is to continue the open grasslands of the lands to the west on HCN land and to begin the transition to oak opening that will occur on lands to the east. The southern part of this sub-unit helps make the open grassland connection from the HCN land to the Rocket Area. The pine plantation here will be removed as soon as practical, although some oaks in the block may be left for the transition to oak opening.

A trailhead and parking lot will be constructed here at the site of the former nitric acid plant (locator point “11 S”).
A new visitor center is proposed to be constructed near locator points “10 S” or “11 S” and may be located in NM1 depending on the location of the access road into the main part of the property. Further information about the proposed visitor center can be found on page 22.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT NM2**

Bordered by the Great Sauk Trail to the north, this sub-unit will be managed primarily as oak opening. The existing storage shed will be maintained for the time being but will be removed when the property manager believes it is no longer serviceable or needed. Upon removal, the site will be restored to oak opening habitat.

The area is currently a mix of grassland, shrub, and forest and early efforts will be focused on thinning the forested areas and decreasing the density and scope of the shrubs.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT NM3**

The central hardwoods forest which comprises much of sub-unit NM3 will be thinned and treated to eliminate unwanted trees and invasive shrubs. This area may be well suited to experiment with various techniques to remove and manage early successional forests and dense shrub cover. Oaks will be planted as needed to create oak opening habitat after initial treatments to remove unwanted shrubs and early successions trees.

The Deterrent Burning Grounds will be permanently maintained in open, grass cover by the Army or its contractors. Trails will be routed near, but generally not on, this capped area.

The agriculture land will continue to be farmed until funds are available to convert the parcel to grassland and oak opening habitats.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT NM4**

The two pine plantations here will be harvested to provide contiguous open habitat between Landfill #5 (which will be maintained in grass cover by the Army or its contractors) and the existing agricultural field. After harvest, the sites will be treated to reduce invasion by weedy shrubs and will be planted to oak opening habitat. The agriculture land will continue to be farmed until funds are available to convert the parcel to grassland and oak opening habitats.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT NM5**

This large block will be managed as an oak opening and over time will require planting of oaks, hickories, and other associated trees as well as ground flora.

The immediate area around the bunkers will remain closed to the public until the structures are secured. The Department may use one or more of the bunkers here and some of the concrete bases as interpretive features to explain the production of nitroglycerin that occurred here.

The 25-acre sand and gravel borrow pit will be classified as a special management area and the Department may use material from here to fill in the reservoirs or the lower level of the former pump house at Weigand’s Bay.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT NM6**

Although the large grassland in NM6 was planted with non-local seed, this sub-unit currently provides important habitat for many grassland birds and other associated species. As such re-planting the area to
local genotypes is considered a lower priority for now. This area will be a priority to conduct prescribed fires in the near-term.

DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT NM7

This area is centered on the swale that drains to the east. The area near the “duck pond” harbors many large open-grown oaks and has been the focus of past restoration work. Much of the rest of NM7 is heavily overgrown with shrubs and early successional forest. This sub-unit may be well-suited to experiment with various techniques and combinations of techniques, such as biofuel harvest, to thin forests and remove dense shrub cover. Oaks will be planted as needed to create oak opening habitat. Around 2019, part of NM7 is currently scheduled for a thinning harvest.

Summary of proposed recreational use and facility development

OBJECTIVES:

- Provide high-quality trail experiences for hiking, biking, horseback riding, cross country skiing, snowshoeing.
- Provide a connecting snowmobiling trail between the southeastern portion of the BAAP and DLSP.
- Provide adequate facilities to support equestrian use.
- Develop a visitor center near locator points “10 S” or “11 S” (and potentially in NM1 or NMS) that offers interpretive wayfinding opportunities, display space for the Badger History Group and others, and potentially limited office space for Department staff and a small meeting space.

PRESCRIPTIONS:

i. Near-term Prescriptions (0-15 years)

- Develop a trailhead and parking lot (ten cars) near locator point “11 S.”
- Establish up to five miles of biking and equestrian trails on former roads.
- Build up to six miles of new recreational biking, six miles of new equestrian, and three miles of new hiking trails.
- Build up to three miles of new mountain biking trails if connecting trails are authorized in a revised DLSP master plan.
- Develop interpretive materials for the nitroglycerin area, bunkers, and other sites.
- Construct a designated use area that provides parking area for up to ten horse trailer-rigs and six cars, a corral, hitching posts, 20’x20’ open-sided shelter, and vault toilet.

SUMMARY OF AUTHORIZED FACILITIES:

- Trailhead & parking lot – up to 10 vehicles, gravel surfaced.
- Designated use area with a parking lot designed to accommodate up to 10 horse trailers and six vehicles, gravel surfaced. The site will also include a corral, hitching posts, 20’x20’ open-sided shelter, and vault toilet.
- Up to five miles of combined biking and equestrian trails on former roads.
- Up to six miles of biking, seven miles of equestrian, and 3 miles of hiking trails.
- Up to three miles of narrow, single-track mountain biking trail if part of connected trails in DLSP.
- New visitor center, parking, and associated facilities.
• Part of the snowmobile trail from the southern boundary of SPRA to Burma Road.

Summary of resource management and protection

OBJECTIVES:
• Establish and maintain a mosaic of oak opening, grassland, shrubland, and oak woodland habitats that support a diversity of plants and animals.
• Support and enhance habitat for rare plants and animals.
• Convert non-native surrogate grassland to ecologically appropriate native prairie and oak opening plants.
• Reconstruct oak opening and oak woodland using ecologically appropriate native species.

PRESCRIPTIONS:

i. Near-term Prescriptions (0-15 years)
• Reduce woody encroachment in grassland and oak opening areas (NM6, NM5 and NM2).
• Thin the wooded swale in NM7, focusing on leaving the larger trees to create an oak opening setting.
• Establish white and bur oaks where necessary to restore oak opening and woodland habitat.
• Harvest the conifer plantation in NM6, possibly in conjunction with a bio-fuel harvest.
• Improve conditions for prairie vole by addressing invasive vegetation (particularly spotted knapweed).

ii. Longer-term Prescriptions (16-50 years)
• Convert 300 acres of surrogate grassland to native prairie species.
• Reconstruct approximately 800 acres of oak opening (including 45 acres currently in row crops) using grazing, prescribed fire, and other techniques described in Chapter II.B.3. Plant native herbaceous plants and oak saplings as needed.
• Manage the remaining forests following best management practices.
### SUMMARY OF LAND COVER:

<table>
<thead>
<tr>
<th>Land cover</th>
<th>Current amount (acres)</th>
<th>Desired amount in 15 years (acres)</th>
<th>Desired amount in 50 years (acres)</th>
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<tbody>
<tr>
<td><strong>UPLAND HABITATS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grassland – native</td>
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### Summary of proposed cultural and historic resource management and interpretation

Some of the interpretive opportunities here include the remnants of several farmsteads, a TNT plant that was never completed, the production of nitroglycerin (and the explosion that killed four workers), the storage bunkers and their potential use as bat hibernaculum, glacial history and the terminal moraine. For more discussion on opportunities for interpretation here, see page 80.

### Land management classification

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<th>Land management classification</th>
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<tr>
<td><strong>TOTAL</strong></td>
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</table>
d. **Rocket Area**

**Existing conditions**

This 879-acre unit was heavily disturbed during plant operations and was used primarily in the production of rocket propellant and related materials. Hundreds of structures and dozens of miles of roads were constructed here. Much of the topography and soil were altered during construction and deconstruction (e.g., contaminated ditches were dug out and filled). At both the eastern and western edges of the production area are 8 to 15 foot high protective berms, on and around which woods have developed since 1942.

Despite these impacts, the bulk of this unit harbors surrogate grasslands, some mixed with native species, some recently hayed, some with light to dense shrub growth, along with some scattered pines. A few large oaks are present. Together, these habitats support significant populations of grassland and open shrubland birds (e.g., Eastern Meadowlark, Dickcissel, Willow Flycatcher, and Field Sparrow). This unit could support larger populations of many rare and common grassland birds if woody invasives are controlled and connections are developed between this unit and adjacent grassland tracts, especially the large block being transferred to the Ho-Chunk Nation. Other connections to facilitate include those to the grassy expanses in the Northeast Moraine and Magazine Area. Indeed, this unit, and its continuity with nearby grasslands, shrublands and oak openings, is critical to maximizing the ecological value of SPRA (and the entire BAAP property) for grassland wildlife.

As a large grassland block, this area could provide quality pheasant hunting opportunities through a put-and-take operation.

The eastern portion of this sub-unit (RA4) mostly lies outside the actual rocket production area and contains the main landfill, where the majority of the former structures of the ammunition plant are now buried. The landfill complex is fenced and includes two large grass-covered mounds. Other portions of this sub-unit are hillier than the rest of the Rocket Area and are currently mostly wooded with a spruce plantation and post-1942 origin woods, although some older open-grown oaks also occur. The far eastern part of RA4 includes some crop fields currently used by DFRC.

The far western portion of the Rocket Area is wooded, within which lies about 14 acres of a white pine plantation, which will eventually be harvested. Removing these trees will help to minimize forest cover growing between the Rocket Area and the large grassland block being transferred to the Ho-Chunk Nation. Thinning the northern end of this wooded section will create a corridor for movement of wildlife associated with grasslands. A harvest here could occur in conjunction with almost any other such harvest on the SPRA property.

**Discussion of the proposed management**

The central portion of the Rocket Area will be managed as a large grassland with some scattered open-grown oaks. Initial priority will be to reduce the shrubs and young trees that are invading the area using fire, brushing, grazing, or other techniques. Also of priority is to establish native grasslands in the portions of this block that have not experienced extensive impacts to soils. In the course of restoring this area, there may be opportunities to return some portions to row crops or other farming systems for a limited number of years as a means to reduce weed species and prepare soils for replanting to native species.

This unit will have only a limited amount of recreational development. This unit will be managed to provide high quality pheasant hunting opportunities through stocking in the fall. Some trails will be established in the area, but they will primarily be located around the perimeter. One option for trails might be to put them
along the top of the berms at each end of the Rocket Area to provide visitors with views east and west. Trails will be sited to minimize impacts to hunting use here and some trails may be closed during the pheasant season. Trails will cross the eastern side of the Rocket Area to connect the Northeast Moraine with the Southern Link (and the Wisconsin River).

In the southwestern corner of the Rocket Area a small site to support model rockery will be constructed.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT RA1**

A short-term need is to thin and eventually harvest the pine plantation and other trees in the northwestern portion of RA1 to open up the corridor between the main part of the Rocket Area and the HCN land. Together, these two blocks of land comprise over 2,000 acres of grassland habitat. The wooded corridor along the western edge of the sub-unit will be thinned and converted to oak opening and grassland habitat.

An approximately two-acre site at the south end of this sub-unit will be used for launching both model and high power sport rockets. The site will consist of a set of launching pads and a viewing area, along with a 10-car parking lot. The site will be developed based on the National Association of Rocketry guidelines. This site will be classified as a Type 4 recreation management area and will be reserved through a special event permit system administered by the property manager. The Sauk Prairie Airport is located approximately 3.7 miles to the south and launching some types of rockets may require permission from the Federal Aviation Administration.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT RA2 AND SUB-UNIT RA3**

These two areas will be managed with the same objective of providing open grassland habitat with a few scattered large oak trees. The primary management technique in both sub-units will be prescribed fire. Some of the southern part of RA2 was less disturbed and may be appropriate to convert to a rotation of agricultural crops for several years to reduce weeds. A Norway spruce is located in RA3 at the site where an old church was located before the construction of the BAAP and will be kept for its interpretive value.

**DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT RA4**

This area is gently rolling and will support trails that wind up the eastern half of the property.

The sub-unit is mostly classified as a central hardwoods forest (primarily box elder and black cherry with some oaks) and will be restored to an oak opening with pockets of grassland and oak woodland. Oaks will need to be planted here because there are not enough of them in this stand to create an oak opening or woodland. The 14-acre white spruce plantation will be clearcut and removed. A small 5-acre central hardwood stand in the eastern portion of the sub-unit is currently scheduled for a commercial thinning in 2019. A portion of RA4 is currently farmed and will remain in agricultural use for the near term.
The main landfill and will be maintained by the Army or its contractors. The landfill is fenced and will remain closed to public access. The fenced area extends about 250 yards west of the landfill. The Wisconsin Army National Guard is evaluating the potential of clearing this part of the fenced area and using it as a training site for landings and take-offs.

Summary of recreational use and facility development

OBJECTIVES:
- Provide a limited amount of trail opportunities.
- Provide pheasant hunting opportunities through stocking.
- Provide an opportunity for sport rocketry that has open habitats in the general down-wind (summer time) direction.

PRESCRIPTIONS:

i. Near-term Prescriptions (0-15 years)
- Establish a 10 car parking area and a two-acre area to accommodate launching model and high powered sport rockets.
- Establish approximately four miles of biking and equestrian trails on old roads.
- Construct approximately five miles of equestrian and two miles of biking trails, primarily along the periphery of the large grassland block.
- If the visitor center is constructed in the Gateway Corridor, construct approximately 0.7 mile of the hiking trail leading from the visitor center up to the overlook at the site of the former reservoirs (5 miles total).

SUMMARY OF AUTHORIZED FACILITIES:
- 10 car parking lot and a two-acre site to support sport rocketry.
- Up to four miles of biking and equestrian trails on old roads.
- Up to five miles of equestrian, three miles of biking, and 0.7 mile of new hiking trails.
- Part of the snowmobile trail from the southern boundary of SPRA to Burma Road.

Summary of resource management and protection

OBJECTIVES:
- Establish a large block of grassland habitat in the western three management sub-units (RA1, RA2, RA3) that is largely devoid of trees and shrubs. Maintain scattered large open-grown oaks, cottonwoods and shagbark hickories.
- Create high-quality habitat that supports viable populations of grassland birds.
- Actively maintain desired grassland species through the use of a variety of management techniques described in Chapter II.B.3.
- Minimize forest cover in the connection between this unit and the large grassland block slated to be transferred to the Ho-Chunk Nation.
- Restore prairie and oak opening habitat in the eastern management sub-unit (RA4).
PRESCRIPTIONS:

i. Near-term Prescriptions (0-15 years)
   - Remove non-native invasive woody vegetation from the grasslands in RA1, RA2, and RA3.
   - Evaluate threats and prioritize areas for restoration and appropriate non-invasive surrogate grassland cover.
   - Stabilize highly disturbed sites with native or non-invasive surrogate grassland vegetation and manage as needed to prevent heavy invasion by woody and herbaceous non-native invasive plants such as autumn olive and spotted knapweed.
   - Restore/replant the parcels that have not experienced significant impacts to soils (estimated 200 acres) to native prairie species. Evaluate potential to farm these parcels with a rotation of row crops to reduce weedy species prior to planting with prairie species.
   - Thin the wooded block at the north end on RA1 to improve the open connection between the grasslands of the HCN land and those in RA1, RA2, and RA3.
   - Manage surrogate and native grasslands to maintain their open aspect.
   - Maintain the small number of large oak, hickory and cottonwood trees that currently exist scattered in the area.

ii. Longer-term Prescriptions (16-50 years)
   - Replant 400 acres to native grasses and forbs.
   - Once woody vegetation has been reduced to desired levels, manage surrogate and native grasslands primarily through prescribed fire.
   - Include grazing, haying, or other techniques as needed on surrogate grasslands as a means to reduce invasion of woody vegetation.
   - Establish scattered oaks as needed to create oak opening habitat.
   - In highly disturbed areas, improve soil as needed and feasible.
   - Harvest remaining plantations and significantly thin wooded area along the western side of the unit. Replant with native grasses and forbs and scattered oaks to re-create native grassland and oak opening habitat.
SUMMARY OF LAND COVER:

<table>
<thead>
<tr>
<th>Land cover</th>
<th>Current amount (acres)</th>
<th>Desired amount in 15 years (acres)</th>
<th>Desired amount in 50 years (acres)</th>
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<td><strong>UPLAND HABITATS</strong></td>
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Summary of proposed cultural and historic resource management and interpretation

Interpretive opportunities could include grassland restoration and wildlife, different types of grazing systems, different aspects of the production of rocket paste, and the main landfill (where many of the former 1,400 buildings that used to be on the BAAP property are now buried). Also, the former church site (where a Norway spruce remains) and homesteads along the east-west road offer additional interpretive opportunities.

Land management classification

<table>
<thead>
<tr>
<th>Land management classification</th>
<th>Acres</th>
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<tr>
<td>Recreation management area</td>
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<td><strong>TOTAL</strong></td>
<td>879</td>
</tr>
</tbody>
</table>
e. **Southern Link**

**Existing conditions**

This 180-acre corridor links the main portion of SPRA with the Wisconsin River valley. STH 78 bisects this parcel. This unit provides an interesting recreational opportunity to travel between the main part of the property and a Lake Wisconsin overlook. However, from an ecological perspective this narrow corridor has only marginal value as a connection from Lake Wisconsin to the Baraboo Hills. There are no species that require a connection from a large flowage (lake) habitat to a large forest block to meet life history needs. Much of this portion of the property is currently farmed in row crops by the Dairy Forage Research Center through a rental agreement. A crescent shaped area in SL1 is a mix of former pasture, some low land and a small wooded block.

The portion of this unit east of STH 78 is about 50 feet above Lake Wisconsin and, although the parcel does not extend down to the shoreline, it provides excellent views of the water. As such, this part of the property provides a quality opportunity to establish both a day use area overlooking the water as well as a starting point for visitors to enter into the rest of the SPRA property by biking or walking.

About 1/3rd of the unit is wooded to some degree. The forest on the east side of STH 78 is of relatively high value and is nearing full stocking. Some small farmed wetland pockets also occur here. A small (8 acre) grassland area lies within the farmed lands west of STH 78.

**Discussion of the proposed management**

Vehicle access to a modern day use area overlooking Lake Wisconsin will be from State Highway 78. The day use facilities will include a small 16’ x 16’ open-sided shelter that will provide vistas of Lake Wisconsin. An approximately 0.3 mile, paved, two-way moderately-developed road will be built leading to a ten-vehicle parking lot. This parking lot will also serve as a trailhead for on-road bicycle use for the recreation area. This trailhead will also have a single vault toilet and information kiosk. A loop nature trail would leave from this general area.

Upon leaving the trailhead, a crushed aggregate trail for pedestrian and bicycle use will be built that will cross State Highway 78 and enter the main portion of the property. This approximately 1.0 mile moderately-developed trail up to the Rocket Area will be 10 feet in width. A portion of the trail may utilize the entrance roadway.

Although the farmland in this unit would be among the easiest parts of SPRA to replant with prairie species and would have a high likelihood of success, this conversion from row crops is a low priority given the more pressing restoration work that is needed in other parts of the property to address areas before they become too degraded. The existing farmland will continue in agricultural use until funds are available to construct a day use facility in sub-unit SL2 overlooking Lake Wisconsin. The 19-acre forest block in SL2 includes a wide variety of upland hardwood species and is quickly approaching full stocking. A thinning harvest will be conducted around 2019.

The land east of STH 78 may be planted to oak woodland (through a DNR Regeneration Grant) before the shelter and associated facilities are constructed. A portion of the area will be an open grassy area for a picnic and day use area. The small wetland sites will also be restored. The DNR will work with Wisconsin Power &
Light (which owns the narrow slope down to Lake Wisconsin) to identify potential ways to open up the view from a picnic shelter out over the lake.

**Summary of recreational use and facility development**

**OBJECTIVES:**
- Develop a modern day use area in SL2 with views of Lake Wisconsin.
- Establish a connecting biking – hiking trail from the day-use area to the Rocket Area.
- Construct a loop nature trail originating from the day use area.

**PRESCRIPTIONS:**

i. **Near-term Prescriptions (0-15 years)**
   - Construct an approximately two-acre modern day use area and Lake Wisconsin overlook.
   - Construct a biking and hiking trail from the day-use area east of STH 78 to the Rocket Area.
     Work with DFRC to potentially site a connecting trail from the day-use area to the Magazine Area on DFRC property (possibly on or adjacent to the perimeter road).

**SUMMARY OF AUTHORIZED FACILITIES:**
- Biking and hiking trail – approximately 1.0 mile.
- 10 car gravel or paved parking lot.
- Two-way moderately-developed road – approximately 0.3 miles.
- Open-sided shelter – 16’ x 16’.
- Vault toilet.
- Information kiosk.
- Interpretive nature trail.
- Potentially part of the snowmobile trail from the southern boundary of the property to Burma Road.

**Summary of resource management and protection**

**OBJECTIVES:**
- Restore the degraded oak opening in sub-unit SL1.
- Restore small wetlands in sub-unit SL2.
- Convert the agricultural land in management sub-unit SL2 to oak woodland.
- Actively manage the existing forest in sub-unit SL2 and convert to oak woodland over time.

**PRESCRIPTIONS:**

i. **Near-term Prescriptions (0-15 years)**
   - Maintain the existing agricultural lands in SL1 in active farming use.
   - Evaluate options to restore the degraded oak opening in SL1.
   - Restore the agricultural lands to native oak woodland and forest using a Regeneration Grant.
     Restore the farmed wetlands.
ii. Longer-term Prescriptions (16-50 years)

- Supplement the diversity of the understory plants in the blocks of oak opening habitat in SL1.
- Work with Wisconsin Power & Light, which owns the narrow strip of land along Lake Wisconsin, to thin some of the trees and improve the view overlooking Lake Wisconsin.

### SUMMARY OF LAND COVER:

<table>
<thead>
<tr>
<th>Land cover</th>
<th>Current amount (acres)</th>
<th>Desired amount in 15 years (acres)</th>
<th>Desired amount in 50 years (acres)</th>
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<td>UPLAND HABITATS</td>
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<td>Developed land</td>
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<td>2</td>
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<tr>
<td>LOWLAND HABITATS</td>
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<td></td>
</tr>
<tr>
<td>Lowland herbaceous and emergent</td>
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<td>3</td>
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<tr>
<td>Lowland shrub and forest</td>
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<td><strong>180</strong></td>
<td><strong>180</strong></td>
<td><strong>180</strong></td>
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</tbody>
</table>

Summary of proposed cultural and historic resource management and interpretation

This area was not actively used in the operation of the BAAP facility and was mostly farmed since 1942. There may be opportunities to develop interpretive materials related to wetland and habitat restoration, farming operations, and the formation of Lake Wisconsin.

### Land management classification

<table>
<thead>
<tr>
<th>Land management classification</th>
<th>Acres</th>
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<td>Recreation management area</td>
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<td>Type 3 setting</td>
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<td>Type 4 setting</td>
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<td>Habitat management area</td>
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<td>Native community management area</td>
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<td>Special management area</td>
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</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>180</strong></td>
</tr>
</tbody>
</table>
f. Magazine Area

Existing conditions

The bulk of this 607-acre unit was home to more than eighty “magazines” (buildings used to store propellant material). Because these buildings were widely spaced for safety reasons, much of this area was relatively undisturbed. Soils throughout much of this area were not significantly impacted and large portions were grazed over the course of the plant operations. The topography is mostly rolling with some small scattered kettle ponds and wet depressions, particularly in the northeastern section. Given its undulating hills and current oak opening conditions, the area is well suited to provide high quality recreation experiences, particularly trail-based activities.

Most of MA2 was identified in the REA as the Prairie and Savanna Primary Site (SPRA02). This 110-acre site features a small (approximately 3 acre) remnant prairie (known as the Hillside Prairie, which the Sauk Prairie Conservation Alliance has been instrumental in helping manage for many years) and adjacent oak opening that has become overgrown. The remainder of this sub-unit, about 100 acres, is surrogate grassland that supports many rare and declining grassland birds. Rare plants have been recorded from this general area in the past, although recent attempts to relocate them have been unsuccessful. The Prairie Vole (a Special Concern species) has been recorded near this Primary Site.

Current vegetation in most of the Magazine Area is primarily a mix of surrogate grassland (largely brome grass) with shrubs, cedars, and early succession trees becoming increasingly established. Although there are some large open-grown oaks here, there are many large cottonwood trees scattered throughout this unit that provide, in some ways, surrogate oak opening conditions. A high priority for management is to address the various shrubs, cedars and other early successional woody vegetation that is invading much of the unit and to maintain the open surrogate grassland in MA2.

Several small ponds are also present, which add to the ecological diversity of the area. The Thoelke Cemetery is located in the northeastern portion of this unit. The area also contains a series of settling ponds, dredge spoil sites, and the “Geotube” disposal area along the southern portion. The settling ponds were constructed to capture sediment and contaminants at the lowest part of the property’s drainage. The ponds were dredged in the 1970s to remove contaminated soils, which were then buried in a set of capped spoil piles. The “Geotubes” contain contaminated sediments from Gruber’s Grove Bay. The immediate area where the tubes are buried is closed to public access to protect the integrity of the protective cover.

This unit also includes two narrow strips of restored prairies between the perimeter road and the property boundary (in the far southwestern corner of the property). The eastern edge of the narrow east-west oriented strip has been invaded with shrubs.
Discussion of the proposed management

Because the Magazine Area is separated from the rest of the property, it provides a unique opportunity to potentially host special events that do not disrupt visitors to the main part of the property.

With its gently rolling topography and largely undisturbed condition, the Magazine Area is one of the most scenic parts of SPRA and is well suited to support trails. The long-term goal is to establish approximately four miles of biking trails; until these are constructed approximately three miles of old roads will be used for both biking and horseback riding. Two sites here will likely draw a number of visitors – the Thoelke Cemetery and the Hillside Prairie.

The Magazine Area will be managed as a large block of oak opening habitat with a grassland block in MA2 and a few small pockets of oak woodland scattered throughout the unit. The Hillside Prairie will continue to be a priority to maintain. Initial management priority will be to eliminate the invasive shrubs, cedars, and young trees in MA1, MA2 and MA3.

Although a number of scattered large trees occur throughout the area, many are not oaks but rather cottonwoods. These trees, in combination with the dense growth of brome grass and other herbaceous plants create a “surrogate oak opening” habitat. Initial management will focus on enhancing this surrogate habitat through prescribed fire and possibly mowing, grazing, and other techniques. Cedars, shrubs, and early succession trees will be removed. Over time, bur oaks and native grasses and forbs will be planted.

The Department will also work with DFRC to identify opportunities to conduct forest management in the band of DFRC land between the Magazine Area and the Rocket Area. Reducing the forest cover on these DFRC lands will significantly improve the ecological value of SPRA lands for oak opening and grassland species.

DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT MA1

A staging area for special events will be developed in the northwest section of this sub-unit. This will include an approximately two-acre cleared, grassy area along with a 20’x20’ open-sided shelter, vault toilet, and picnic tables. This site is intended to support events that may use just this site, the Magazine Area, or potentially the entire SPRA.

A small parking lot will be established near the Thoelke Cemetery to accommodate both visitors to the cemetery as well as people that will be using the site as a starting point for biking, hiking, hunting and other activities. This area will be managed as oak opening habitat, with a denser concentration of trees near the cemetery.

DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT MA2

A small parking lot will be established south of the Hillside Prairie to accommodate both people visiting or helping restore the prairie as well as people that will be using the site as a starting point for biking, hiking, hunting and other activities. This sub-unit will be an initial priority for habitat management work at SPRA. Efforts will focus on maintaining the open aspect of much of this area through the use of prescribed fire, tree cutting, and potentially grazing. The Hillside Prairie and adjacent oak opening will also be a managed through fire and addressing invasive shrubs. The wooded areas will be thinned.
DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT MA3

This sub-unit will be managed primarily as open grassland with a small woodland area maintained near the Geotube site. The Geotube area will remain closed to public access to ensure the integrity of the cap.

DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT MA4

This sub-unit contains a series of settling ponds, through which Final Creek used to flow. In addition, there are a set of capped dredge spoil sites. The area will be managed as open grasslands through a variety of management techniques. The capped areas will be managed to ensure the covering material is not compromised.

DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT MA5

Part of this sub-unit is relatively heavily wooded and will be thinned to create an oak opening habitat. This sub-unit will be designated as a Class 2 dog training ground.

DISCUSSION OF THE PROPOSED MANAGEMENT SPECIFIC TO SUB-UNIT MA6

This small narrow sub-unit, which lies outside the perimeter fence, was restored to prairie grasses and forbs many years ago. The east-west running portion is increasingly being invaded with shrubs, especially on the east end. This sub-unit will be managed as open grassland with only limited hunting or wildlife watching opportunities due to its narrow shape.

Summary of recreational use and facility development

OBJECTIVES:

- Provide a staging and use area for special events.
- Provide high quality biking experiences.
- Provide a Class 2 dog training ground.
- Provide vehicle access to the Thoelke Cemetery and the Hillside Prairie, as well as appropriate parking.
- Provide interpretation of the cemetery and former church, former farmsteads and associated remains, morainal topography, and the magazines.

PRESCRIPTIONS:

i. Near-term Prescriptions (0-15 years)

- Establish approximately three miles of trails that support both biking and horseback riding (including carts) on the former network of unpaved roads linking the former magazine sites.
- Establish a special events area with an approximately two-acre grass area, a 20’x20’ open-sided shelter, vault toilet, grills and picnic tables.
- Establish an approximately 72-acre Class 2 dog training ground in sub-unit MA5.
- Establish two, 10-car parking lots – one near the Thoelke Cemetery and the other near the Hillside Prairie.
- Construct approximately four miles of new biking trails.
SUMMARY OF AUTHORIZED FACILITIES:

- Special event area with an approximately two-acre grass field, 20’x20’ open-sided shelter, vault toilet, grills and picnic tables.
- 10-car parking lots near the Hillside Prairie and Thoelke Cemetery.
- Three miles of trails that support both biking and horseback riding (including carts) on the former network of unpaved roads.
- Four miles of new biking trails.
- 72-acre Class 2 dog training ground.
- Part of the snowmobile trail from the southern boundary of the property to Burma Road.

Summary of resource management and protection

OBJECTIVES:

- Establish and maintain oak opening along with a mosaic of grasslands, oak woodlands, and wetlands to support a diversity of plants and animals.
- Support and enhance habitat for rare plants and animals.
- Convert non-native surrogate grassland to ecologically appropriate native prairie plants.
- Work with DFRC on thinning or removing the forest blocks on their land between the Rocket Area and the Magazine Area.
- Maintain and enhance the Hillside Prairie and adjacent oak opening within the Prairie and Savanna Primary Site.

PRESCRIPTIONS:

i. **Near-term Prescriptions (0-15 years)**

   - Continue to manage the Hillside Prairie remnant and the narrow prairie plantings along the southwest border of the SPRA property.
   - Reduce the number of trees and shrubs in the surrogate grassland in MA2 (Primary Site SPRA02).
   - Leave scattered open grown oaks and other large trees like cottonwoods, but reduce shrubs and undesirable woody vegetation.
   - Assess opportunities to thin the small forested patches to restore them to oak opening or woodland conditions. If there is a good opportunity, harvest trees in these areas potentially in association with harvests on DFRC lands.
   - Address invasion of shrubs, particularly in MA1, MA3, and MA5.
   - Plant scattered oak to eventually replace the large cottonwoods that currently provide surrogate oak opening settings.

ii. **Longer-term Prescriptions (16-50 years)**

   - Continue to manage the Hillside Prairie remnant and the narrow prairie plantings along the southwest border of the property.
• Convert 100 acres of surrogate grassland to native prairie plantings, centering on the Primary Site (MA2).

• Supplement the diversity of the understory plants in the primary blocks of oak opening habitat in MA1, MA2, and MA3.

### SUMMARY OF LAND COVER:

<table>
<thead>
<tr>
<th>Land cover</th>
<th>Current amount (acres)</th>
<th>Desired amount in 15 years (acres)</th>
<th>Desired amount in 50 years (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPLAND HABITATS</td>
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<tr>
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<tr>
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<tr>
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<tr>
<td>Forest – hardwood</td>
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<td>Lowland shrub and forest</td>
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<tr>
<td>TOTAL</td>
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<td>607</td>
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</tr>
</tbody>
</table>

### Summary of proposed cultural and historic resource management and interpretation

Many interpretive opportunities occur here. Notable topics could include the Thoelke Cemetery, farm life, the glacial history here, and the former settling pond area (and its subsequent clean-up and restoration). In addition, the Hillside Prairie has a unique history. For more discussion on opportunities for interpretation here, see page 80.

### Land management classification

<table>
<thead>
<tr>
<th>Land management classification</th>
<th>Acres</th>
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</tr>
<tr>
<td>TOTAL</td>
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</table>
g. **Weigand’s Bay**

**Existing conditions**

The operation of the propellant plant required massive amounts of water. To meet this need, a large pump house was built at the end of a peninsula in Weigand’s Bay that pumped water from Lake Wisconsin up to the reservoirs at the north end of the BAAP property. The building sat on four acres, which were transferred to the DNR. The pumps were taken out, contaminants eliminated, and much of the building was removed. The concrete walls and floors remain. The water depth along the structure is approximately 20 to 30 feet and the bay is known to hold large populations of pan and game fish; as such, the former pump house provides an opportunity to create a high quality fishing experience for people with mobility limitations.

The ground slopes gently towards the water on the south side of the peninsula; the slope is considerably steeper on the north side. Vegetation on the entire peninsula is predominately poor quality trees (e.g., box elder) and dense brush. A considerable amount of poison ivy is present. This small, heavily wooded parcel is well-suited to be maintained in forest cover with a goal of improving the quality of the composition of trees over time and to maintain a forest with older growth characteristics. Numerous dead trees have fallen over into the water. Some clearing of shoreland areas would improve fishing access along the point, but this needs to be balanced with the improved fish habitat characteristics that coarse woody material in the shore zone provides.

In addition to the pump house parcel, the Town of Merrimac owns the western-most portion of the peninsula (approximately 8 acres). The DNR purchased 3.5 acres (under the Statewide Fisheries Habitat program) between the Merrimac land and the pump house parcel creating a contiguous block of public land from Ruthe Badger Lane out to the tip of the peninsula. As part of this master plan process, the 3.5-acre parcel will be re-designated to be part of Sauk Prairie State Recreation Area. There is not contiguous public ownership from the Weigand’s Bay parcel to the rest of the SPRA property.

The DNR and the Town of Merrimac have agreed that this combined 16-acre block of public land should be managed cooperatively and the DNR has agreed to take on management responsibility for the entire block for public use. Although this master plan only addresses the state-owned lands, the DNR will manage the town-owned lands using the management practices and prescriptions mentioned below. The DNR will pursue a formal agreement with the Town of Merrimac addressing management responsibilities.

Access to this area will be along the northern Weigand’s Bay road. This unit provides an opportunity to establish a small day use area that provides shore fishing (including ADA compliant fishing opportunities), a carry-in launch for canoes, kayaks, and other boats, picnicking, and a short hiking trail.

**Discussion of the proposed management**

A paved parking lot for up to six vehicles will be constructed for carry-in boat access and shoreline fishing opportunities. An information kiosk and vault toilet will be developed near the parking lot. The remaining pump house structure will be developed into a fishing site with handicapped accessible fishing opportunities. Access to these lands will be from the northern Weigand’s Bay Road and signage will be placed near Hwy 78. A 15-vehicle overflow parking lot will be constructed off of Ruthe Badger Lane. Trail connections will also be
made to the 6.5 acre Town of Merrimac lands west of the Department lands. These trails will connect to the
overflow parking and offer more opportunities for shoreline fishing along the bay.

The habitat of the Weigand’s Bay parcel will be managed primarily as a wooded peninsula. The shoreline
will be opened up somewhat to improve fishing opportunities, but coarse woody debris will be left along
the shore for fish habitat. Given both its small size and its distance from the majority of the rest of the
property, only limited active forest management activities are feasible here. The trees in this area will be
managed primarily for recreational and aesthetic purposes.

Summary of recreational use and facility development

OBJECTIVES:

- Establish a modern day use area at the site of the former pump house with parking, a carry-in launch
  for canoes, kayaks, and other boats, parking, a vault toilet, and information kiosk. Provide overflow
  parking off of Ruthe Badger Lane.
- Provide 0.3 mile of walking trails.
- Provide high quality fish habitat and shore fishing opportunities along the entire point.
- Re-construct the former pump house into a handicapped accessible fishing site.

PRESCRIPTIONS:

i. Near-term Prescriptions (0-15 years)

- Develop the modern day use area, parking and trails.
- Convert the remaining pump house structure to a platform or pier that provides fishing
  opportunities, including for people with accessibility limitations.
- Improve shore fishing access by thinning some trees along the shore.

SUMMARY OF AUTHORIZED FACILITIES:

- Parking lot – up to 6 vehicles (with handicap-accessible spaces), paved, lighted.
- Parking lot – overflow parking for up to 15 vehicles, unpaved.
- Carry-in access for boats.
- Vault toilet.
- Fishing platform or pier on the former pump house with opportunities for accessible fishing.
- 0.3 miles of moderately developed trail, primarily to provide shore fishing access.
- Information kiosk.

Summary of resource management and protection

OBJECTIVES:

- Improve the quality of the forest over time through forest management.
- Address invasive species to minimize their impact on the ecological and recreation values of the
  peninsula.

PRESCRIPTIONS:

ii. Near-term Prescriptions (0-15 years)
• Manage the forest for older growth characteristics.
• Clear some vegetation along the shoreline to improve fishing opportunities, while leaving adequate woody material in the near shore area for aquatic habitat.
• Address invasive species issues as staffing allows.

iii. Long-term Prescriptions (16-50 years)
• Continue to address invasive species.

SUMMARY OF LAND COVER:

<table>
<thead>
<tr>
<th>Land cover</th>
<th>Current amount (acres)</th>
<th>Desired amount in 15 years (acres)</th>
<th>Desired amount in 50 years (acres)</th>
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<tbody>
<tr>
<td>UPLAND HABITATS</td>
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<tr>
<td>Grassland – native</td>
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<td>Oak woodland</td>
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<tr>
<td>Forest – hardwood</td>
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<td>Forest – conifer plantations</td>
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<tr>
<td>LOWLAND HABITATS</td>
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<tr>
<td>Lowland herbaceous and emergent</td>
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<tr>
<td>Lowland shrub and forest</td>
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<td></td>
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<tr>
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<td><strong>TOTAL</strong></td>
<td><strong>8</strong></td>
<td><strong>8</strong></td>
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</table>

Summary of proposed cultural and historic resource management and interpretation

Interpretive opportunities here include the pump house and pipeline up to the reservoir site, Lake Wisconsin, settlement of the area, and forest management. For more discussion on opportunities for interpretation here, see page 80.

Land management classification

<table>
<thead>
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<td>Habitat management area</td>
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<td>Native community management area</td>
<td></td>
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<td>Special management area</td>
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</table>
C. Proposed cultural and historical resources management and interpretation

Although nearly all of the physical evidence of the property’s former use as a propellant plant has been removed, there are still some cultural and historic resources on SPRA, including a cemetery, several farmstead remnants, and miscellaneous infrastructure from the manufacturing era. In addition, several conifer and walnut plantations that were planted at different times still exist, as well as many fruit trees associated with farmsteads. To complement the limited number of physical elements remaining at the property, the Badger History Group has a large collection of pictures, documents, drawings, and artifacts that tell the story of the BAAP.

Despite the removal of the farmsteads and nearly all the infrastructure associated with the production of propellant, there are still many opportunities to inform visitors about the site and its human and natural history through a variety of interpretive methods. To facilitate the interpretation of key cultural and historic resources, seven areas – ranging in size from 13 to 166 acres – were identified within SPRA. These are areas in which interpretive efforts may be most effective in integrating cultural and historic interpretation into visitor experiences. Options for interpretation include the use of small signs and a broad range of both general and detailed information and historical photographs, available through hand-held electronic media (e.g., smart phones and tablets).

The proposed master plan would provide vehicle access adjacent to or within all seven areas; other parts would also be accessible from trails. Some portions of a couple of these areas could extend onto land owned by the Dairy Forage Research Center (DFRC) or the Ho-Chunk Nation. The Department will work with these partners to identify opportunities to collaboratively manage or facilitate public understanding of these areas.

It is the Department’s hope that protecting and showcasing the remaining cultural and historic resources on SPRA, as well as providing educational and interpretive displays across the property, will contribute to the public’s understanding and appreciation of the site’s significance to the county, state and nation.

Following the approval of the master plan, the Department will prepare a Property Interpretation Plan consistent with similar plans developed for other State Parks and State Recreation Areas. The Department will work with the Ho-Chunk Nation, the Badger History Group, and other organizations in developing that plan. As with other Department properties, before any impacts to the soil will occur, staff will consult with the DNR archaeologist to ensure that sensitive sites will not be impacted.

The seven cultural and historic resource areas are described here and shown in Map K at the end of the document.

1. ENTRANCE ROAD AND DEMONSTRATION AREA – approximately 100 acres.

This area is within the Gateway Corridor unit and offers a good opportunity to demonstrate historical, current and experimental habitat management techniques being used at SPRA and other lands of the former BAAP. This may include roadside viewing areas with interpretive materials. There are several cultural items that can be covered from these same roadside stations, including:

- General pictorial overviews of the plant representing different historic periods, taken from approximately the same viewing site during pre-BAAP, construction, production, deconstruction and recent.

- Special emphasis on administration, single-base (Nitro-cotton or NC) and Ball Powder production areas and possibly the production workers who died in accidents in these areas. The only structural remains are intact concrete bases of warehouses or rest houses at east end of Ball Powder.

- Pre-BAAP farmsteads and community buildings such as Sumpter town hall, Methodist Church, Gasser and Roick families. Demonstrations of historical land use (e.g., grass hay or pasture) could incorporate on-site historical information such as historical first-hand accounts of local residents.
• If Ho-Chunk land immediately to the north is managed as extensive grassland, this area will offer good opportunities to see and hear grassland birds.

2. OVERLOOK, WATER RESERVOIRS AND GEOLOGICAL AREA — approximately 13 acres.

This area is within the Bluff Vista unit, on the south flank of the South Bluff, overlooking nearly the entire BAAP and may be the most significant interpretive site of SPRA. Many opportunities exist here to provide interpretation for visitors about what they are seeing from the view as well as sites at the overlook, including:

• There are excellent examples of the Cambrian shoreline that were exposed during construction of the reservoirs in 1942. These show the juxtaposition of the ancient quartzite monadnock and the sands and cobbly beaches that developed when it was inundated by Cambrian seas. This includes pock-marks on exposed quartzite caused by percussion from quartzite fragments tossed about in the surf. There are also in situ quartzite boulders scoured by silt-laden winds that descended from the edge of the ice sheet that stood nearby to the east, during the last glaciation about 12,000 years ago. These features can be integrated into the greater story of the Baraboo Hills and glaciation that is told at adjacent Devil’s Lake State Park, especially with the view of the terminal moraine, outwash plain and Paleozoic blufflands seen from the overlook here. To a large extent, the features seen here complement rather than duplicate those preserved at DLSP.

• The function of the reservoirs was crucial to plant operation and the site now provides conceptual connections between production, siting of the plant, the Wisconsin River, and groundwater. Excellent ground and aerial photography of the site before and during construction provide lessons in engineering, land use history and plant succession (which has changed the local landscape, even on the massive spoil piles since they were created in 1942). This will help interpret the history and significance of the transition between prairie and woodland that this unit represents.

• This is the site of the unusual population of neotenic eastern tiger salamanders that developed in the East Reservoir, and their historical and biological significance can be described. It is one of many interesting examples of unintended consequences of the plant.

• The overlook provides a rare opportunity to view a significant landscape and—with the help of graphics and text—imagine changes that have taken place over millennia and especially in historic times. This could include the ancient Cambrian seascape, the advance of the Wisconsin glacier, the creation of today’s basic landscape with the terminal moraine, kettle ponds, outwash plain, Driftless Area bluffland and Wisconsin River valley; the Sauk Prairie on the outwash and savanna on the moraine and woodland on the South Bluff; the area’s use by Native peoples, and the changes that ensued with Euro-American settlement, farming, the construction of the plant, production, deconstruction and subsequent land management.

3. PIONEER CEMETERY-KERN CORNERS AREA — approximately 50 acres.

Just below the overlook, this area is in the southwest corner of the Bluff Vista unit and potentially could extend to Ho-Chink Nation lands. Its features illustrate geology, the prairie-bluff woodland transition, wetland creation and management, other hydrological issues, and Euro-American history. Interpretive opportunities include:

• If the area’s natural hydrology is restored (allowing the incoming stream to empty and soak into the outwash plain and its grassland), this will demonstrate an important experiment, and the effects of stream channelization and restoration on flood events (i.e., on nearby Otter Creek). Meanwhile, scrapes made here to provide clay for deconstruction and landfilling activities on-site have created artificial wetlands that provide important wildlife habitat.

• This will be an excellent vantage to view and interpret the grassland-woodland transition to be restored here.
• The Pioneer Cemetery on Ho-Chunk Nation land contains graves from the local community, spanning the time from original Euro-American settlement to 1942. At least one gravestone shows that one person could not be buried with their spouse, who died prior to 1942.

• Several former farmsteads were here, including some with apple trees that remain along with foundation remnants. The road that leads over the Baraboo Range here (now known as Burma Road) was an important travel corridor between Baraboo and the Sauk Prairie and points south.

• Several BAAP structures stood in this area or on adjacent Ho-Chunk Nation land, including the massive the water treatment plant that received water from the pumping stations on Weigand’s Bay on Lake Wisconsin. There are many dramatic aerial photographs of this area as it changed during the construction of the plant in 1942.

• The south part of this area is excellent for viewing and hearing the grassland bird community that figures so prominently in the biological significance, management and goals of SPRA and the Ho-Chunk Nation tract.

4. TNT-NORTH MORAINE AREA — approximately 165 acres.

Located in the northern part of the Northeast Moraine unit, this area is now much invaded by dense exotic shrubs and native and exotic trees, which currently hide several interesting and significant historical and geological features including:

• The terminal moraine and a kettle pond that has largely recovered as a site for wastewater retention.

• At least three farmsteads (Erickson, Gattwinkel, Schlag) with some remnant features such as a hand pump, foundations, shade trees, and beds of garden flowers. In addition are the foundations of a power plant and other structures from the aborted TNT plant.

• 1942 aerial photographs in combination with more recent photographs demonstrate how quickly land cover can change, both with management and lack thereof.

5. NITROGLYcerine, Bat Bunkers, and Moraine Farm Area - approximately 105 acres.

Centrally located in the Northeast Moraine unit, this scenic area’s interpretive opportunities include:

• An overlook (complete with historic photographs, personal interviews and other materials) of the use of nitroglycerine in the production of propellant, the odd features associated with this production, and the 1945 explosion that killed four men, including the uncle of Karl Armstrong (who during the Vietnam Era attempted to bomb the plant and bombed Sterling Hall on the UW-Madison campus).

• Bunkers retained as potential hibernacula or refuge sites for bat reintroductions, potentially when such sites are needed in response to recovery from white-nose syndrome.

• Morainal topography, 3-4 kettle ponds and oak savanna remnants.

• The Huber and Eschenbach farmstead sites, which maintain some good structural remnants (e.g. intact barn foundation), garden flowers, and shade trees.


Located in the northeast part of the Magazine Area, this area incorporates several farmsteads, a church site, cemetery and savanna oaks and scenic kettle ponds. Interpretive opportunities include:

• Thoelke Cemetery and adjacent church foundation, with day lilies and graves with mostly German names, including a child who was buried without other family members.
• Farmstead remains for the Thoelke, Henry, Schlag, and Steidtman families. The Henry site includes a house foundation, sidewalk with boot scraper, horseshoe and baby footprint embedded, cistern and irises. This site figured prominently in interviews with family members in documentary “Powder to the People” and with photos in the “Inside the Fence” exhibition. The Steidtman farm was the site from which the father would not leave and had to be physically removed in 1942. The Schlag farmstead remnant has large shade trees, house foundation, and the remains of root cellar. Many fruit trees occur here, although it is uncertain if they were planted or naturalized.

• Morainal topography including scenic knolls, kettles and oak savanna trees. Ponds contain important breeding populations of invertebrate and amphibians, and are used by waterfowl. A bluebird nest-box trail runs through this area.

• Although no remnants of magazine buildings remain here, some are nearby on DFRC property. Although the future of these buildings is unknown, there may be opportunities to work with DFRC to showcase them. Historic photos could show changes from the farm community to production (propellant storage in magazine buildings) and restoration in this area.

7. HILLSIDE PRAIRIE, MAGAZINE PASTURE AND FINAL CREEK AREA -approximately 75 acres.

This area in the southwest portion of the Magazine Area includes a native prairie and oak grove, farmsteads, and a geological feature that served as a settling pond for production wastewater. Interpretive opportunities include:

• The periglacial\(^\text{27}\) outlet channel for Glacial Lake Merrimac, cut through the moraine here as the glacier receded. The channel was used by BAAP as part of a series of settling ponds for production wastewater that entered through Final Creek. The swale used to drain into nearby Lake Wisconsin at Gruber’s Grove, which continues to be impacted by contamination originating from the BAAP.

• The “Hillside Prairie” is likely the only true prairie remnant on SPRA. Although probably grazed to some extent during the farming era, it is believed that the sod was never plowed. Along with the adjacent grove of native bur oaks, this area has been managed by volunteers with the Sauk Prairie Conservation Alliance.

• The Kurtz and Waffenschmidt farmstead remnants.

\(^{27}\) “Periglacial” refers to places at the edges of glacial areas.
D. Proposed infrastructure and facilities management

Although nearly all the former infrastructure that was part of the BAAP has been removed, some facilities remain or will be constructed at Sauk Prairie Recreation Area to meet the needs of visitors and staff. This section describes how the facilities, present or proposed, will be managed.

1. RECREATION-RELATED FACILITIES

a. Roads

Over 150 miles of roads were built during the operation of the BAAP, of which more than 70 miles are located on SPRA (including roads along boundaries). The remnants of that road network are in varying states, with most in fair to poor condition. The Department proposes to permanently maintain a subset of approximately 15 miles of the former road network as designated roads for public vehicle access; the remainder will be converted to trail use, used for staff management access, or removed over time. The proposed network of designated public roads (see Map F) will be a combination of asphalt and gravel surfaces, depending on visitor use levels and funding availability. All roads open to the public will be classified as moderately developed roads. The Department’s goal, to the degree that funding is available, is to pave all roads that receive heavy public use. Gravel roads will be graded as needed. A limited amount of new road may need to be constructed to fill gaps between existing roads or to improve traffic flow.

In addition to roads open to the public, the Department will maintain approximately seven miles of former roads for management access. These roads will be closed to the public (except by special permit) and will be classified as moderately developed roads.

Once the proposed new visitor center is built, the Department will plow the entrance road to the center. Until the visitor center is built and depending on the road access into the main part of the property, the Department may plow the entrance road to a parking area near locator points “10 S” or “11 S.”

The Department will coordinate with the HCN and DFRC regarding use and maintenance responsibilities of roads along boundaries where there is joint ownership. All designated public roads will be inspected twice a year and any deficiencies noted will be addressed.

b. Designated trails

Designated trails for hiking, biking, snowmobile riding, and horseback riding will be developed as funding and staffing are available. In many cases former roads will be used with the goal of narrowing and resurfacing them as appropriate. The Department will seek to collaborate with partners in developing these trails.

Trails will cover the complete range from primitive to fully-developed. Some trails may be one-way. All trails will be inspected twice a year and any deficiencies noted will be addressed.

Great Sauk Trail

A proposed state rail-trail will connect the villages of Sauk City and Prairie du Sac to near the southeastern part of Devil’s Lake State Park. This trail, known as the Great Sauk Trail, would provide public recreation opportunities and possibilities for connections between existing state and local trails. About 4.5 miles of the trail will follow an existing rail corridor through the former Badger Army Ammunition Plant. The DOT, Wisconsin River Rail Transit Commission, and DNR entered into an interim lease agreement in 2011 that allows development of a recreational trail in the corridor, although the DOT can re-take possession of the corridor at any time with one year’s notice. Within SPRA, the Department proposes to surface the trail with
crushed, compacted limestone. However, if funding is available (e.g., from a partner group), the trail in SPRA may be surfaced with asphalt.

The Great Sauk Trail is a partnership project between Sauk County, local units of government and the Department of Natural Resources. Sauk County is leading this planning project and completed a cooperative plan in April 2015. The Department will present the plan to the Natural Resources Board for review as a potential new State Trail. The larger planning horizon for the proposed Great Sauk Trail may include the construction of successive segments with the potential goal of providing a trail connection between the City of Middleton and the 400 State Trail in Reedsburg.

c. Reservoirs and overberk

The Department proposes to construct a day-use area at the site of the reservoirs with an observation deck, amphitheater, picnic area, shelter, and parking. The site will be designed and managed to provide views of the BAAP property and other notable features. The site will be inspected twice a year and any deficiencies noted will be addressed.

The two reservoirs will be drained, razed, and filled. It is estimated that filling the two reservoirs will require approximately 70,000 cubic yards of material. Fill material may come from an on-site sand and gravel borrow pit, from digging up roads elsewhere on SPRA that are no longer needed, or from other sources.

d. Weigand’s Bay (former Pump House)

The site will be developed and managed as a carry-in boat access site, picnic area, and shore fishing site. When funds are available, the remaining pump house structure will be reduced to a platform or pier to provide fishing opportunities. The site will be inspected twice a year and any deficiencies noted will be addressed.

e. Parking lots

Twelve parking areas are proposed on the property, ranging in size to accommodate 6 to 50 cars. One parking lot will be developed to accommodate horse trailers. All parking lots will be inspected twice a year and any deficiencies noted will be addressed.

f. Picnic areas and shelters

Picnic areas will be developed and maintained at the following locations:

- Visitor center
- Bluff Vista overlook (with shelter)
- Weigand’s Bay
- Lake Wisconsin overlook (with shelter)
- Horse trailer parking and loading area (with shelter)
- Special event staging and parking area in the Magazine Area (with shelter)

Picnic areas will be mowed as needed, typically two to four times/month during the growing season. All picnic areas and shelters will be inspected twice a year and any deficiencies noted will be addressed.

g. Visitor center

A visitor center is proposed to be constructed near the locator points “10 S” or “11 S.” This building will have staff offices, restrooms, and space for interpretive displays, including displays from the Badger History Group.
A paved 15-vehicle parking lot will be constructed to serve the visitor center and hikers and bikers starting their outings from the site. Picnic tables will be placed on the grounds, along with interpretive displays.

2. OTHER FACILITIES ON THE PROPERTY

a. Building 207

Building 207, the 4,800 ft² building near the main entrance gate, was built in the 1970s and is in marginal condition. It currently houses the archives of the Badger History Group and a small museum operated by their volunteers. The building’s transfer in ownership from the GSA/NPS to the DNR triggered the requirement for it to meet the access standards outlined in the American Disabilities Act (ADA) in order to be open to the public. The building does not meet these standards and, as a consequence, the museum has been temporarily closed to the public. In addition, the building has several structural and operational limitations that affect its long-term viability and utility.

This master plan proposes the construction of a new visitor center that includes space for a modest-sized display area, some of which could be used by the BHG. The visitor center may also be designed to provide office and storage space for various Department staff. Given the long lead time required in the process of building new state facilities, it is expected to take 8 to 10 years for a visitor center to be approved, funded, and built. Once the visitor center is operational, it is highly likely that Building 207 would be removed.

The Department recognizes the integral nature of the Badger History Group’s archives and their work to educate and interpret the history of the site into visitor’s overall experience. As such, the Department is committed to providing display space for the group in the new visitor center and, to the degree possible, interim space over the next 8 to 10 years.

To better understand the costs associated with making the improvements needed for the museum to reopen in Building 207, the Department contracted with an engineering firm to assess the structure. Addressing just the minimal repair and ADA compliance costs are estimated to total approximately $100,000. Before spending limited funds addressing deficiencies in a structure that is likely to be removed in a decade, over the next six to eight months the Department will evaluate other options to house the BHG and agency staff.

If adequate space for the next 8 to 10 years for the BHG and DNR staff is located, the Department will propose to address structural issues to prevent further deterioration of Building 207, but to leave it unoccupied. The building would be removed when the visitor center is built. If adequate space cannot be found, the Department will plan to make the necessary improvements to the building to make it ADA compliant and to address structural issues.

b. Landfills and capped lands

The Army is responsible for inspecting and maintaining the grass cover on the landfills and other capped lands (e.g., the Deterrent Burning Grounds and New Acid Pond area). In total, there are seven capped sites on SPRA (including landfills). The Army is responsible for maintaining the fence around the main landfill. The Department is required to provide access to the landfills to the Army and their contractors. The public may walk on the landfills and capped areas with the exception of the main landfill and the Geotube site.

c. Monitoring wells

The Army is responsible for inspecting and maintaining the monitoring wells. The Department is required to provide access to the monitoring wells to the Army and their contractors.
d. Storage buildings

The open-sided storage building in the Gateway Corridor will be removed when funds are available. The Quonset buildings in the Gateway Corridor and the large storage building in the north end of the Northeast Moraine unit will be used for storage and maintained as long as deemed appropriate and feasible by the property manager. When buildings are taken down, all concrete and demolition debris will be removed and the area will be graded to a natural-appearing contour.

The storage buildings and their immediate surrounding areas will be closed to public access.

e. Bunkers

The bunkers in the former “Nitro” area are not well-suited to provide hibernation sites in their current condition, primarily because they become too cold in the winter. Improvements are needed to the front entryways to make them more secure from unregulated entry. In addition, the bunkers need additional soil piled on their surface to insulate them and provide necessary over-winter conditions. These improvements may be made when funding is obtained and when researchers are available to conduct the necessary treatment and monitoring steps. Until then, the bunkers will be locked to prevent public access and surface piping and other materials removed. An associated building near the bunkers has been closed up.

3. FACILITIES AND STRUCTURES TO BE REMOVED

a. Roads

Approximately 70 miles of road, in varying conditions, exist on SPRA. As described earlier in this plan, about 22 miles will be used as public access or service roads. Approximately 12 miles of former roads will be temporarily converted to bike and equestrian trails. Roads that are no longer needed will be removed as feasible.

b. Fences

Some internal fences exist on SPRA, most of which are in poor condition and will be removed when funds are available. Fences that could be used in grazing operations will be maintained to the degree practical.

The portions of the BAAP perimeter fence that still exist along the border of SPRA may be kept where adjacent landowners wish to maintain the fence. In these situations, the fence poles may be kept and trimmed down so a smaller fence can be installed. The perimeter fence may also be kept along the southern boundary (adjacent to Keller Road) as a means to reduce the likelihood of dogs wandering off the training ground site. The fence surrounding the main landfill will remain.

c. Building foundations and rubble piles

Hundreds of concrete foundations from former buildings throughout SPRA were moved to a staging site on HCN lands and crushed into rubble and placed in a large pile northeast of the main entrance gate. The DOT plans to reuse this material in reconstruction work on USH 12.

d. Miscellaneous features

In some areas of SPRA various structures remain above ground, including fire hydrants, pipes, and utility bases. If they do not serve any interpretative function, these features will be removed and disposed of as staffing and funding allows.
CHAPTER II: Management, development, and use

E. Proposed general property management policies and provisions

The following section describes general property administration and management policies and provisions that apply to all of SPRA.

1. AGREEMENTS WITH THE HO-CHUNK NATION

The Department will collaborate with the Ho-Chunk Nation to develop policies and agreements addressing issues of mutual interest including: public and staff access routes; border road use, maintenance, and enforcement; coordination of and assistance with habitat management; protection and management of cultural resources; and other issues. All formal agreements with the Ho-Chunk Nation will be approved by the Department Secretary or designee.

2. AGREEMENTS WITH THE DAIRY FORAGE RESEARCH CENTER

The Department will collaborate with the USDA Dairy Forage Research Center to develop policies and agreements addressing issues of mutual interest including: public and staff access routes; border road use, maintenance, and enforcement; coordination of and assistance with habitat management; protection and management of cultural resources; and other issues. All formal agreements with the Dairy Forage Research Center will be approved by the Department Secretary or designee.

3. WISCONSIN ARMY NATIONAL GUARD USE OF THE PROPERTY

The Department will collaborate with the Wisconsin Army National Guard to find ways to incorporate their training needs at SPRA in ways that do not conflict with the primary purposes of the property. The Department will also work with the Guard to identify opportunities to incorporate training experiences that address various property management needs. An example could be the removal of former roads that are no longer needed or the deconstruction and reconstruction of the pump house into a fishing platform or pier.

4. CLEAN UP AND RECLAMATION

Although the property has been inspected and evaluated and is believed to be free of contaminants and hazards, the possibility exists that some may be located in the future. In the event that this occurs, the Department will secure the site as appropriate, and contact the Army. The Department and Army will take proper steps to protect visitors, including potentially closing the property or portions of the property until the issue has been satisfactorily resolved.

5. SPECIAL USES OF THE PROPERTY

As with other Department properties, groups will have the opportunity to host special events at SPRA.

The Department’s intent is that most special events take place either within the special event area in the northwest corner of the Magazine Area or use that site as a staging area for events held within the Magazine Area as a whole. The Magazine Area is separate from the rest of the property and events that need the space could reserve the nearly 600 acres here. Special events would not be authorized to use the native community management area (Hillside Prairie) or the special management area (“Geotube” site).

Groups interested in hosting special events will need to apply for a permit with the property manager.

6. FUNDING CONSTRAINTS

Implementation of the master plan is dependent upon staffing and funding allocations that are set by processes outside of the master plan. Operational funding for the Department is established by the state legislature.
Development projects also follow a separate administrative funding and approval process. Many of the initiatives contained within this plan are dependent upon additional funding and staffing support. Therefore, a number of legislative and administrative processes will determine the order and rate at which different components of this master plan are implemented.

7. FACILITY MANAGEMENT AUTHORITY

The property manager may relocate or temporarily close roads, trail segments, or other public use facilities as deemed necessary after appropriate authorization by normal Department approval processes. Any new road or trail (or other facility) location and design must be consistent with the land classification requirements (NR 44) and the management objectives for the management area in which it is located.

8. PUBLIC HEALTH AND SAFETY

All facilities will comply with federal, state, and local health and sanitation codes. The property manager has the authority to close trails and other facilities on the property when necessary due to health, safety, or environmental damage concerns. In designated public use areas, such as parking lots and trails, trees or other natural elements that are deemed public hazards will be removed. Safety inspections will be completed at least twice per year.

9. AUTHORIZED RESPONSE TO CATASTROPHIC EVENTS

Wildfires, timber diseases and insect infestations shall be controlled to the degree appropriate to protect the values of each management area. Necessary emergency actions may be taken to protect public health and safety. Appropriate management responses to catastrophic events will be determined on a case-by-case basis.

10. REFUSE MANAGEMENT

Visitors are required to carry out any refuse they produce. No refuse or recycling receptacles will be available. Burying refuse is not allowed anywhere on the property.

11. ROAD MANAGEMENT PLAN AND PUBLIC VEHICLE ACCESS POLICY

The following management prescriptions apply to Department managed roads:

- Maintain permanent service roads and public access roads in a sustainable condition according to best management practices.
- Regularly inspect active roads, especially after heavy storm events. Clear debris as needed from the road surfaces, culverts and ditches to decrease unsafe conditions and prevent damage.
- Maintain stable road surfaces to facilitate proper drainage and reduce degradation from traffic during wet or soft conditions; or close the road when these conditions exist.
- Monitor soil disturbance and take measures to prevent excessive damage.
- Restore roads used in timber harvests to non-erosive conditions, in accordance with Wisconsin Forestry's Best Management Practices for Water Quality.

A large number of roads were built on the property during its use as a propellant plant. Some of these roads will be used to provide public vehicle access, for different types of trails, and for staff use. Public access roads managed by the Department shall be constructed and maintained as moderately developed roads. Many of the former roads are no longer needed, closed to public use, and gated or signed as such. As resources are available, the DNR will remove unneeded roads.
12. DISABLED ACCESSIBILITY

All new construction and renovation of infrastructure will follow guidelines set forth within the Americans with Disabilities Act and also be done in a manner consistent with NR 44 standards of the land use classification of the site where the development is located.

The Department recognizes a need to provide reasonable access to Department lands by persons with physical disabilities, which includes permitting persons with disabilities to use motorized vehicles on Department lands when use of motor vehicles is essential to assure access due to a person’s physical limitations (DNR Manual Code 2527.7). The property manager has the authority to make reasonable accommodations, including motorized vehicle access for people with disabilities, but shall be consistent with the access standards of the management areas’ recreational use setting sub-classification, if one applies.

13. ENDANGERED, THREATENED AND SPECIAL CONCERN SPECIES PROTECTION

Implementation of all management prescriptions in the master plan will be carried out with consideration of the needs of endangered, threatened, and species of special concern and the potential impacts to the species and their habitat. Management actions planned during plan implementation will be checked against a database of listed species to ensure that no Department actions results in the direct taking of any known endangered or threatened resource.

14. BEST MANAGEMENT PRACTICES FOR WATER QUALITY

All forest management activities will comply with the most recent version of the guidelines in the Wisconsin Forestry’s Best Management Practices for Water Quality.

15. PEST CONTROL

Wisconsin Statute 26.30 states; “It is the public policy of the state to control forest pests on or threatening forests of the state...” Any significant forest pest events will be evaluated with consideration given to the property management goals and the potential threat of the pest to other landowners. Infestations of the non-native gypsy moth caterpillar will be managed according to the Forest’s Gypsy Moth Management Plan. Responses to significant infestations from other forest pests may include timber salvage or pesticide treatments. Any response to a significant pest outbreak will be evaluated by an interdisciplinary team of scientists and communicated through press releases and notices to interested parties.

16. CONTROL OF INVASIVE SPECIES

Invasive plants will be controlled using appropriate and effective methods, including but not limited to the use of bio-control, herbicides, cutting, hand removal, fire, or grazing. Control methods may be restricted in certain sensitive management areas. Given the large infestations of invasive plants (particularly shrubs) on the property, the Department may seek to use and research unconventional approaches.

17. CHEMICAL USE

Herbicides and pesticides may be used for various purposes such as the control of invasive plants or to control plant competition in vegetation regeneration areas and insect control, except as restricted in the management prescriptions in this master plan. All Department procedures and herbicide and pesticides label requirements will be followed.
18. PRESCRIBED FIRE

Prescribed fire may be used as a management tool where feasible and safe, except when restricted by
management area prescription. It may be used to help regenerate forest cover types such as oak types. It may
also be used to create and maintain grassland/prairie habitat, wildlife habitat, to reduce fuels to lessen fire hazard
and to control undesirable vegetation.

19. FIRE SUPPRESSION

As stated in Wisconsin Statutes 26.11, “The Department is vested with power, authority and jurisdiction in all
matters relating to the prevention, detection and suppression of forest fires outside the limits of incorporated
villages and cities in the state except as provided in sub (2), and to do all things necessary in the exercise of such
power, authority and jurisdiction.” Forest fire suppression actions will consider the property management goals
and the threats of the fire to life and property. Appropriate techniques will be used in each event to provide
effective fire suppression while minimizing resource damage.

20. NON-METALLIC MINING POLICY

The Department may use gravel, sand, dirt or other fill material from Department-owned lands for Department
use. A large amount of material was taken out of a borrow pit in the Northeastern Moraine unit. If the
Department needs more fill material, this borrow pit may be well suited as a source of material.

Under certain circumstances other government bodies or agencies may also have access to these materials. Wis.
Stats. s. 23.20 states, “the department may permit any town, county, or state agency to obtain gravel, sand, fill
dirt or other fill material needed for road purposes from any department-owned gravel pit or similar facility if this
material is unavailable from private vendors within a reasonable distance of the worksite. The department shall
charge a fee for this material commensurate with the fee charged by private vendors.”

Nonmetallic mining is regulated under the requirements of NR 135 Nonmetallic Mining Reclamation, Wis. Adm.
Code, except for sites that do not exceed one acre in total for the life of the mining operation. Site reclamation
under NR 135 is administered by the county. NR 135 requires mining sites to be located appropriately, operated
in a sound environmental manner, and that all disturbed areas be reclaimed according to a reclamation plan.
Department of Transportation projects are exempt because DOT projects have their own reclamation
requirements. New sites will not be considered where they would impact geological or ecological features of
significance or within any designated State Natural Area.

21. METAL DETECTORS

Use of metal detectors on Department property is authorized only by permit (NR 45.04) issued by the property
manager.

22. PAINTBALL AND AIRSOFT POLICY

Chapter NR 45.04 prohibits activities involving paintball guns, paint markers, or discharge of similar devices on
any lands, except when authorized by the Department. Although no facilities are proposed in this master plan
to specifically accommodate these activities at SPRA, the property manager may permit them on a special event
basis.

23. FIREWOOD COLLECTION PERMIT

The property manager can issue firewood collection permits as deemed appropriate to complement
management objectives to remove standing invasive/non-desirable trees, clean up after timber sales, and to
remove unwanted downed trees.
24. DARK SKY PROTECTION

All lighted facilities at SPRA will be evaluated to minimize fugitive light issues and maintain night viewing opportunities. Evaluations will balance visitor and staff safety with the recognition that state properties are some of the best opportunities for the public to experience and learn about the night sky.

25. GEOCACHING

Generally, geocaching will be allowed on SPRA. Caches may not be placed without the applicant filling out Geocache Placement Notification, form 2500-118, and submitting it to the property manager. The property manager may require the cache be periodically moved to avoid over-use of an area or the development of volunteer trails. Additionally, it is the responsibility of the geocache placer to monitor the cache regularly and report any vandalism or deterioration of property as well as any change in location.

The Department takes no responsibility for any vandalism or other damage to the geocaches due to events such as new developments, timber cuts, wildfires or Department-prescribed fires.
F. Proposed real estate plan and practices

1. PROJECT BOUNDARY

In 2002 the NRB established the project boundary for SPRA and an acquisition goal of 3,800 acres. The existing SPRA project boundary generally follows the BAAP boundary and includes the lands owned by DFRC (2,105 acres), Bluffview Sanitary District (164 acres), DOT (60 acres) and Town of Sumpter (3.6 acres) as well as the land being transferred to the Ho-Chunk Nation (1,553 acres). About 80 acres within the boundary where it extends over to the Weigand’s Bay site are privately owned.

The Department proposes to adjust the SPRA project boundary to remove the Ho-Chunk Nation’s lands. When the initial project boundary was established in 2002, it was unclear which lands would be transferred to the Ho-Chunk Nation and which might come to the Department. This issue has now been resolved and in recognition that the HCN is a sovereign nation the Department is proposing to remove these 1,553 acres from the SPRA project boundary. The new project boundary would encompass 5,761 acres.

The only privately-owned land within the existing and proposed SPRA project boundary is located between the Weigand’s Bay site (old pump house) and the main property. A trail connecting the Weigand’s Bay site and the main part of the property is not proposed in this master plan. As such, the Department does not anticipate acquiring any privately-owned lands within the project boundary over the next 15 years.

2. ACQUISITION POLICIES

It is the policy of the Natural Resources Board and the DNR to acquire lands from willing sellers only. As required by state and federal laws, the Department pays just compensation for property, which is the estimated market value based on an appraisal. At times, it is in the interest of the Department and the landowner for the Department to acquire only part of the rights to a property, or an easement. The Department has a number of easement options available to address these situations.

3. AIDS IN LIEU OF TAXES

For all State properties acquired after 1992, the Department makes an annual payment in lieu of property taxes to replace property taxes that would have been paid if the property had remained in private ownership. For SPRA lands, the DNR’s “payments-in-lieu-of-taxes” (often referred to as PILT) in 2014 were $16,478 to the Town of Merrimac and $36,223 to the Town of Sumpter. These monies were distributed by the towns to the other taxing jurisdictions (e.g., school districts) following their regular allocation process. More detailed information on how the Department pays property taxes may be found in a publication titled, Public Land Property Taxes, PUB-LF-001 and can also be found at: http://dnr.wi.gov/org/land/facilities/realestate/pilt.html.

4. EASEMENTS, ACCESS PERMITS, AND LAND USE AGREEMENTS

Occasionally, the Department enters into agreements with other parties related to the use and operation of a property. Easements can provide access across state property for utilities, town roads, or county highways. Easements are permanent and will continue to be upheld under the master plan. Access permits can also provide access across state property. Land use agreements provide for a variety of uses on a Department property, such as snowmobile trails. The Department may enter into these types of agreements as necessary or appropriate. The Department may enter into formal arrangements with the Bluffview Sanitary District and the Town of Sumpter providing them with appropriate access to the well house and Thoelke Cemetery, respectively.

The Department may also enter into farming agreements or contracts consistent with the objectives and actions described in this master plan.
G. Proposed public communication and involvement plan

The public, recreation and conservation groups, businesses, schools, government agencies, and others will have opportunities to both stay informed and to assist the Department on implementation of this master plan. The public will be periodically informed through press releases, postings on the DNR website, and notification through the GovDelivery email system about activities and developing issues at Sauk Prairie Recreation Area. The public will also be notified of opportunities for involvement when significant, new issues related to management of the property arise. Annually the Department will also issue a brief report, through the same channels, that summarizes the following:

- For the past year, the primary management and development activities that were completed and other significant issues that were addressed.
- For the up-coming year, outline any planned management and development activities and any changing management actions or approaches.

The annual report may also include other information of interest to the public on various topics related to management and use of the property. Some of the additional types of information that may be included from time to time are: the status of forest insect or disease problems, storm damage, new information on endangered or threatened species, recreational management problems or new opportunities, and recreational use changes or trends. The report will be available on the DNR website.

In the event the Department considers a change to the master plan (plan variance or amendment) the public will be informed of the proposal and the review and comment process. As appropriate, news releases will be used to announce master plan amendment or variance proposals and review procedures. The Department will also maintain a contact list of persons, groups, and governments who have requested to be notified of potential plan changes.

Another option for the public to be involved with the property is through a friends group. Every year friends groups provide thousands of volunteer hours to help support the mission and activities of more than 70 Wisconsin state parks, forests, trails, and recreation areas. Some of the activities that a friends group could be involved with include:

- Raising money to purchase interpretive displays, signs, shelters, kiosks, and educational materials.
- Organizing annual property cleanups and regular habitat management or trail work days.
- Planning and helping with special events including candlelight nights, educational programs and other special events.
- Assisting with the construction of trails, shelters, and accessible facilities.

If a friends group for Sauk Prairie Recreation Area is formed, the Department will work with the group to achieve mutually beneficial outcomes.

DNR Contact Person
The following Department staff may be contacted regarding questions about Sauk Prairie Recreation Area or the master plan. At the time of this publication, the contact information is:

Steve Schmelzer
Superintendent, Devil’s Lake State Park
phone: (608) 356-8301 ext. 111
e-mail: steven.schmelzer@wisconsin.gov
H. Proposed research opportunities

The Department is committed to working with academic and agency researchers as well as citizen-based monitoring teams interested in pursuing a range of topics at SPRA. Given the property’s history, location, size, habitats, and condition, SPRA is uniquely positioned as a research site. Indeed, early deliberations about the BAAP’s future use recommended the site for a range of research topics, including integrated, cross-discipline issues. Some of the research topics for which SPRA and the other former BAAP lands may be especially fertile ground to pursue include:

- Effectiveness of grazing, brushing, haying, and cutting to remove invasive shrubs.
- Economic costs and benefits of biofuel harvests of shrublands.
- Soil restoration options in formerly developed areas.
- Visitor use levels, recreational activities pursued, and patterns of visitation.
- Biotic inventories before and after invasive species control efforts.
- Bird distribution over a forest to savanna to grassland continuum.

The Department’s ability to assist or oversee research projects will be based on staff availability. All research projects that involve the collection of specimens are required to have a Scientific Collector’s Permit. Authority for issuance of Scientific Collectors permit is provided by s. 29.614, Wis. Stats. In addition, DNR Manual Code 9440.1 outlines the procedure for scientific collecting on any Department property.

All research projects on DNR-owned land or supported by the Department require approved by the Bureau of Science Services. See DNR Manual Codes 8103, 8104.1, and 8104.3 for further information.

Figure 16: Construction of the Magazine Area, looking north. The Rocket Area is in the middle and the Baraboo Hills are seen in the distance. UW-Madison researchers have conducted grazing experiments with goats on Dairy Forage Research Center lands near the left side of the photo.
I. Proposed implementation plan

Department master plans describe the desired future states for properties and the actions and strategies the agency will use to achieve them. Master plans typically do not assign priorities to the proposed work or a schedule of implementation, primarily because completing many aspects of master plans is driven by the availability of funding and staffing, which can fluctuate in unanticipated ways from year to year. Budgets, partnership opportunities, the relative needs of other properties, and other factors all affect the timing of when different parts of a property’s master plan may be implemented.

However, given the many unique aspects of SPRA, the Department believes that there is benefit in describing which parts of the proposed master plan are priorities and are anticipated to be the focus of initial efforts. This section identifies those tasks that the agency proposes to initially address. Of course, the timing and degree of accomplishment will largely be influenced by the resources the Department and partners are able apply here.

Before addressing potential implementation priorities, this section of the master plan starts with a description of the recreation facilities and opportunities that the Department proposes to be available for the public when the master plan is approved.

1. RECREATION OPPORTUNITIES AVAILABLE TO THE PUBLIC AT PROPERTY OPENING

The following recreation opportunities will be available to the public when the SPRA master plan is approved, or shortly thereafter (see Map N):

- With the exception of areas closed to all public access, designated use areas, and designated trails, all portions of SPRA will be open for the following hunting opportunities:
  - Saturday nearest October 17 to February 15 = all hunting seasons
  - Learn to Hunt, Youth, and hunters with disabilities seasons
  - All six week-long spring turkey seasons
- Trapping will be allowed in the main part of the property from November 15 to February 15. All trap types will be allowed, but no trapping may occur within 100 yards of designated use areas, including the Great Sauk Trail when it is operational. Trapping will be allowed within 100 yards of other designated hiking, biking, and horseback riding trails in the main part of the property, unless posted as closed.
- Dog-proof trapping, as is allowed in state parks, will be allowed in the Magazine Area from November 15 to February 15. Trapping may not occur within 100 yards of the special event designated use area in the northwestern corner of the Magazine Area, but will be authorized within 100 yards of designated hiking and biking trails, unless posted as closed.
- All areas open to the public will be available for wildlife watching, hiking, snowshoeing, cross country skiing, edible food picking, nature photography and other similar uses.
- Approximately 12 miles of former roads will be designated and signed as biking and equestrian trails.
- Parking along road shoulders will be allowed, except as posted. Some parking areas may be designated to alleviate congestion and impacts.
- 72-acre Class 2 dog training ground will be established and signed.
- Snowmobile trail from the southern boundary of SPRA to Burma Road.
- Dogs will be allowed off leash from August 1 to April 14 in the Magazine Area.
CHAPTER II: Management, development, and use

The reservoir overlook area and the Weigand’s Bay sites will be closed to the public until they can be secured and are safe for public visitation. The main landfill and the Geotube areas will be permanently closed to all public access.

2. PRIORITY RECREATION FACILITY DEVELOPMENTS

The property improvement projects described for each of the management units in the preceding chapters should generally be implemented according to the three phases as indicated in Table 4. The rate of development will depend upon the availability of funding and the approval of the proposed improvement projects as part of the Department of Natural Resources’ Capital Development Process.

Table 4: Proposed phasing for selected facility developments and improvements.

<table>
<thead>
<tr>
<th>Development</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads and parking lots</td>
<td>I</td>
</tr>
<tr>
<td>Entrance and interpretive signs</td>
<td>I</td>
</tr>
<tr>
<td>Trails</td>
<td>I</td>
</tr>
<tr>
<td>Vault toilets</td>
<td>II</td>
</tr>
<tr>
<td>Open-sided shelters</td>
<td>II</td>
</tr>
<tr>
<td>Redevelopment of Weigand’s Bay (fishing platform/pier, parking, etc.)</td>
<td>II</td>
</tr>
<tr>
<td>Other facilities (corral, picnic tables, grills, gates)</td>
<td>II</td>
</tr>
<tr>
<td>Viewing deck (Bluff Vista)</td>
<td>III</td>
</tr>
<tr>
<td>Amphitheater (Bluff Vista)</td>
<td>III</td>
</tr>
<tr>
<td>Visitor Center</td>
<td>III</td>
</tr>
</tbody>
</table>

3. PRIORITY HABITAT MANAGEMENT ACTIONS

From a habitat perspective, the highest priorities are to prevent areas that are still providing surrogate habitat conditions from degrading to the point where more intensive and expensive restoration or re-creation work will be required. The best examples of this are surrogate grasslands and/or oak openings in the Rocket Area, Magazine Area, and Northeast Moraine that retain enough ground vegetation for prescribed fires to be an effective management tool, but that are rapidly becoming infested with invasive shrubs and early successional trees. If the shrub density continues to increase, there will not be enough undergrowth to support fires hot enough to reduce the shrubs. Indeed, in some portions of these units, it is likely that other techniques, such as grazing or brushing, will be needed before fire will be effective. Priority habitat management actions include the following:

- Conduct prescribed burns in RA1, RA2, RA3, NM1, NM5, NM6, MA1 and MA2.
- Thin the woody cover on the slope of the Bluff Vista (BV1) to restore a mosaic of oak opening and woodland that is continuous and transitional with the grassland and oak opening to the south, and the forests of the broad quartzite bluff to north. Remove trees that block the southward view from the reservoir site.
- In collaboration with the Ho-Chunk Nation, evaluate and implement methods of restoring natural hydrology of the streams flowing off the south bluff of the Baraboo Hills out into the grasslands.
- Harvest the conifer plantations in NM1 and NM6, possibly in conjunction with a bio-fuel harvest.
• Incorporate and evaluate different types of grazing systems as a means to reduce shrub and early succession trees on smaller scales to identify the most effective approaches to apply elsewhere on the property and potentially elsewhere in the state and upper Midwest.

• Continue oak opening restoration efforts in NM7 near the “duck pond.”
CHAPTER III: BACKGROUND AND SUPPORTING INFORMATION

This chapter briefly summarizes the past and current conditions of Sauk Prairie Recreation Area. Much of the material for this chapter is taken from the Regional & Property Analysis, Sauk Prairie Recreation Area (WDNR Pub LF-063). Rather than restate the information in the Regional and Property Analysis (RPA) here, readers interested in additional details about the property are encouraged to review that document. It may be viewed on the web at dnr.wi.gov (keyword “Sauk Prairie Recreation Area” then open the Documents tab).

A. Findings and conclusions of the Regional & Property Analysis

The Regional & Property Analysis describes a wide range of aspects and attributes of both SPRA and the broader landscape within which it sits. The document culminates in a series of findings and conclusions that set the stage for this master plan. They are summarized here:

- The property offers a significant opportunity to manage a landscape scale surrogate grassland habitat.
- A mosaic of grassland, shrubland, and savanna habitats could be established to meet the needs of many animal species.
- The bluffs at the north end of the property are part of the extensive Baraboo Hills and offer opportunities for coordinated management of oak woodland and glade restoration.
- Grassland and shrubland birds, a group of species of critical conservation need in Wisconsin, would benefit from a diversity of grassland habitat in large, unfragmented tracts.
- Currently the high level of shrub and tree encroachment in the grasslands of SPRA threatens the diverse grassland bird community.
- Streams and ponds are rare at this site and provide water resources and wetlands that connect the forested Baraboo bluffs with the grasslands and prairies.
- Thirty-three rare animal species have been recorded at the BAAP property, including four State Threatened and 29 Special Concern species. Seven rare plant species are known from the BAAP, including two State Endangered (one is also Federally Threatened) and five State Threatened species.
- SPRA provides habitat along the Lower Wisconsin River migratory corridor.
- Storage bunkers at the BAAP can provide a unique research opportunity to aid in the conservation and recovery actions for bat populations suffering from White-Nose Syndrome.
- Two ecologically important sites were identified on SPRA and warrant high protection and/or restoration consideration:
  - Sauk Prairie Recreation Area Baraboo Hills Woodland
  - Sauk Prairie Recreation Area Prairie and Savanna
- In the development of recreation plans, SPRA should be considered in the larger context of the Baraboo Hills/Devil’s Lake recreation landscape.
- SPRA is readily accessible to many residents.
- Both motor and non-motorized trail networks should be considered in the master plan. A number of trail opportunities are lacking within the Baraboo Hills/Devil’s Lake recreation landscape that may be met here.
- Access to Lake Wisconsin should be considered.
• Hunting and trapping should be considered for the property in the future. Additionally, limited/controlled hunts could be considered as this would offer a unique experience in the region.

• A number of non-traditional outdoor recreation uses should be considered for inclusion in the master plan. With the large open spaces available at SPRA, the potential exists to fill out the Baraboo Hills/Devil’s Lake recreation landscape with potential uses such as rocketry, shooting ranges, geocaching, dog parks, paintball, community gardens and other recreation activities not typically found on Department lands.

• The best overall functional role for SPRA is to fulfill the highlighted ecological opportunities available while maximizing compatible recreation opportunities. This approach also takes into consideration the nine key values identified in the Badger Reuse Plan, approved by the Sauk County Board in 2001.

Although some conditions have changed over the last three years, these findings and conclusions remain relevant.

B. History of the site

Soon after the last glacier receded from the area some 15,000 years ago, people arrived, as evidenced by occupation in the nearby Raddatz Rockshelter. The Mound Builders built over 300 mounds in the Sauk Prairie area about 1,000 years ago, some of which remain today. For thousands of years, successive populations of Native Americans called the area home, no doubt drawn by the fertile prairies, wooded hills and the Wisconsin River. At different times, the general area was occupied by Muscoutin, Kickapoo, Ho-Chunk, Sauk and Fox tribes. Sauk and Ho-Chunk populations were described by European explorers Marquette, Joliet, and Carver in the 17th and 18th centuries. The Native Americans were forced out of the area through a series of armed conflicts, federal directives, and treaties.

By the 1830s, European immigrant families were settling on the Sauk Prairie. Over the ensuing decades they built a durable and prosperous farming community. Farms were typical of those in southern Wisconsin; lands were devoted to growing a variety of crops including wheat, corn, small grains and hay. Cows, hogs, and chickens were raised along with work horses. Nearly all farms had pastures. Most farms were between 40 and 160 acres. Early photos show a largely treeless landscape on most of the land that would become the BAAP property.

In 1941-1942, after over 100 years of Euro-American settlement, the federal government forced out the landowners and took possession of 10,000 acres north of the village of Prairie du Sac. Although the Badger plant was intermittently active over its lifetime, it ceased operations for good in 1975 and the Army declared the facility excess to its needs in 1997. The federal government, through its real estate and property arm, the U.S. General Services Agency (GSA), initiated a process to dispose of the Badger property. A contentious debate over Badger’s future ensued, with calls to reestablish an industrial manufacturing center competing with pleas to return the land to its original inhabitants and owners.

The former BAAP property has a number of story lines highlighting its significance including the complex geological history given its juncture at three major landforms, the human history of Native Americans, Euro-Americans, and the construction and operation of the Badger Ordnance Works, and the process of salvage and reuse.

C. History of the Badger Army Ammunition Plant and Sauk Prairie Recreation Area

The Badger Ordnance Works, later renamed the Badger Army Ammunition Plant, occupied approximately 10,500 acres on the open plain extending south from the Baraboo Range. At great hardship, more than 80 farm families were

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28 About 3,000 acres that were considered surplus to the plant’s function were sold in 1946, mostly to returning veterans.
forced to abandon their homes and land within a few months’ time. Following the nation’s entry into World War II, the Badger Plant was constructed in 1942 to produce smokeless gunpowder and solid rocket propellant. The plant provided material for the duration of the war effort, and was again operational during the Korean and Vietnam conflicts. At its peak use, BAAP contained 1,400 buildings, over 150 miles of roads and 60 miles of rail, and countless miles of steam, water and power lines. At the height of its activity, Badger employed over 10,000 people and remained a major employment center for Sauk County for decades.

The plant had been in standby (idle) status since 1975. In late 1997, the Army determined that the BAAP facility was no longer needed to meet the nation’s defense needs and began the decommissioning process. Subsequent efforts to define a future for the Badger property proved challenging due to the site’s unusually rich natural and cultural history, environmental issues, the wide range of potential reuse options, and the complexity of local, state, national, and tribal interests involved.

In early 2000, the Sauk County Board of Supervisors acted to establish a locally-driven planning process to identify reuse options. With the assistance of then US Congresswoman Tammy Baldwin (now Senator) and funds provided by the US Department of Labor, the Badger Reuse Committee (BRC) was convened. The 21-member BRC included representatives from neighboring communities, local, state, and federal governments, and the Ho-Chunk Nation. In its mission statement, the BRC charged itself with the task of developing “a common vision for the reuse of the Badger property that can be meaningfully considered and realistically implemented by the appropriate local, state, and federal agencies.”

The results of BRC’s considerable deliberations are documented in the Final Report on the work of the Badger Reuse Committee, which was endorsed by committee members and the Sauk County Board in May 2001. Early BRC meetings were devoted to gathering and reviewing basic information about the Badger property and its role – past, present, and future – in Sauk County’s landscape, community and economy. Based on this information, the BRC defined nine key values to guide consideration of future uses (see Section D). The committee’s final report was agreed to by all parties and serves as the primary guidance document for planning future uses and management. The complete report and related information about the BRC can be found at: http://www.co.sauk.wi.us (search “Badger Reuse Plan”).

In September 2001, the Badger Intergovernmental Group (BIG) convened to work out ownership agreements with General Services Administration (GSA) for the BAAP property. The BIG included representatives from the GSA, DNR, DOA, Governor’s Office, Ho-Chunk Nation, USDA Dairy Forage Research Center, Towns of Sumpter and Merrimac, Sauk County, and the Army. This GSA-led group of future landowners and local government officials focused on parcel footprints and future planning and operations. As a result of these meetings, an agreement was reached that BAAP would be primarily owned by three parties: Ho-Chunk Nation (1,553 acres), USDA-DFRC (2,105 acres), and DNR (3,385 acres). Bluffview Sanitary District (164 acres), DOT (60 acres) and Town of Sumpter (3.6 acres) are also landowners of the former BAAP.

When the future ownership arrangement was developed, the partners initially evaluated the property using the Army’s system of parcel boundaries. Most of these parcels were labeled (e.g., “V3”) and named (e.g., “East Rocket Press Houses”). Parcel boundaries were often drawn down the middle of roads. As a consequence, given the somewhat convoluted collections of parcels transferred to the different partners, in many instances the landowners own to the median of boundary roads, but have joint access to the whole road.

In December 2002, the Natural Resources Board approved establishing Sauk Prairie Recreation Area with a Department acreage goal of 3,800 acres. In 2004, the DNR applied to the National Park Service (NPS) under the Federal Lands to Parks program (FLP) to obtain lands at BAAP for public park and recreation use. In the document outlining the terms and conditions of transfer, the Department described its general intentions for future use and management (“Program of Utilization”). To date, NPS has received 3,053 acres from GSA and conveyed them to DNR.
D. Elements that guided and influenced the development of the proposed master plan

Given the unique history of the property, a number of policies, issues, plans, agreements, and circumstances guided the development of this plan and will continue to influence future recreational uses and habitat management actions that can feasibly be implemented.

1. NATURAL RESOURCE BOARD AND DNR POLICIES

The Wisconsin Natural Resources Board (NRB) sets policy for the Department of Natural Resources and exercises authority and responsibility in accordance with governing state laws. NRB policies are described in NR 1, Wis. Adm. Code and address property management, fish and wildlife management, forestry and fire control, land acquisition, master planning, and many other issues.

Two issues of particular public interest at SPRA, motorized use and a shooting range, have been the focus of recent NRB deliberations. The NRB has requested the Department evaluate potential opportunities to provide both motorized recreation areas and shooting ranges on its properties, particularly in the southern part of the state.

a. Motorized recreation areas

In January 2009, the Department presented to the Natural Resources Board a concept plan for funding, locating, and managing a motorized recreation area (MRA) in the state. Part of the plan described the preferences for selecting an area for a MRA, which included:

- Proximity to a major metropolitan area
- Large parcel
- Acquisition affordability
- Lack of environmental issues or species of conservation concern
- Limited or no conflicts with adjacent neighbors
- Areas where there is a demonstrated demand for motorized recreation and community support
- Land that has limited timber or agricultural production potential

The NRB did not make any official decisions at the January meeting, but concurred with the Department’s approach and proposal. The NRB deferred making any decisions until the Department brought forward a specific proposal for a motorized recreation area.

b. Shooting ranges

In May 2014, the NRB endorsed the Department’s approach to provide additional public shooting opportunities, especially near population centers in the southern and eastern part of the state. The NRB approved the goal of providing public shooting opportunities within 30 miles of most residents and to consider need, amount of public support, cost, hunter education opportunities, and siting constraints in identifying appropriate locations.

The DNR recently went through a process to identify a location for a new public shooting range in Columbia County. In that process, the Department developed the following criteria to evaluate its properties as potential sites:

- Minimize the number of residences within the 1,000 yard buffer.
- Avoid wetlands or hydric soils or soils with hydric inclusions.
• Avoid State Natural Areas.
• Avoid archeological sites.
• Pursue direct road access, preferably located adjacent to major highways or roads.
• Minimize impact on other recreational users.
• Minimize impact on blocks of wildlife habitat.
• Pursue areas where topography is supportive of developing a shooting range.

DNR staff identified seven sites on state properties that met the established criteria. An ad-hoc citizen work group was then formed to study the potential sites with the goal of recommending a preferred site for a new range to DNR. The three towns with potential sites were each invited to select a member to represent their town, as were the Columbia County Board, the Columbia County Sporting Alliance, the Columbia County Conservation Congress, local business and other conservation organizations.

The ad-hoc group worked through a process to develop additional evaluation criteria and ultimately narrowed the seven sites to two potential locations, Dekorra Wildlife Area and Mud Lake Wildlife Area. The DNR then implemented a public input process to obtain citizen feedback on the two sites. Public input was gathered by Department staff attending town board meetings in each town, hosting an open house in Portage to answer questions and posting an online survey which collected feedback for 30 days. All of the comments and information provided was summarized and distributed to the ad-hoc committee for review. The ad-hoc committee recommended Mud Lake Wildlife Area as their top recommendation.

2. BADGER REUSE PLAN

The Badger Reuse Committee was an independent advisory group whose members came from a cross section of community interests. The committee sought to identify recommendations for future reuse of the property for which there was consensus. To this end, the committee adopted nine key values to guide future use of the Badger property (see sidebar). More detailed criteria, by which reuse ideas and proposals could be evaluated, were developed and nested within these criteria. The committee heard 25 proposals for future uses; ecological conservation, industrial and commercial development, agricultural research, firearms training, recreation, landfill, and prison inmate housing and training were among the topics for future uses that were suggested. The committee also evaluated potential future ownership scenarios.

The committee’s final report, issued in 2001 and commonly referred to as the Badger Reuse Plan, outlined a vision for the reuse of the BAAP property that sought to “promote an appreciation of the Sauk Prairie landscape
through the education, restoration, research, recreation, agriculture and other activities.” In addition to the values and criteria, the committee also developed a conceptual map of future use.

The Reuse Plan is a visionary document – both in the sense that it describes the participants’ common set of values and themes to guide future uses of the property as well as in the sense that it was a pioneering effort by a collection of partners to craft a conceptual future for a property with a rich, troubled, and complex history. To quote from the report’s summary (page 4),

*In the past, the Badger lands have too often been a place of division, pain, and conflict. It is the hope of the committee that all members of our community may now contribute to a new beginning at Badger, one that honors the past while serving future generations.*

Although the Reuse Plan is not a legally binding document and is now nearly fifteen years old, the Department believes it remains a central guidance document for the development of the SPRA master plan and ongoing use and management of the property.

3. FEDERAL LANDS TO PARKS PROGRAM

In 2004 the DNR submitted an application to the National Park Service to receive the SPRA property through the Federal Lands to Parks (FLP) program. The Department provided a general description of intended future uses of the property, including for prairie and savanna restoration and low-impact recreation, and noted that more specific details and location information regarding habitat management and recreational uses would be developed during the development of the master plan.

Lands conveyed under the FLP must be used for public park purposes in perpetuity and cannot be sold or leased without NPS approval. In the Acceptance of Terms in the FLP application, the DNR agreed that the property shall revert back to the NPS/GSA if there is a breach of conditions or covenants; that is, if the property is used or managed in a manner inconsistent with the application, or any amendments, approved by the NPS.

Not surprisingly, over the ensuing decade since the DNR submitted the FLP application and the Program of Utilization a number of aspects have changed. For example, in 2004 it appeared that the DNR would be responsible for many buildings that were slated to remain on the property after transfer; this turned out not to be the case because the Army has removed nearly all the buildings. Another example is that the application states that the DNR will prepare a master plan for the entire 7,354-acre BAAP property and that issues common to all three primary partners (HQN, DFRC, and DNR) will be handled in a manner that does not adversely impact the other partners. Although all partners agree on the need to coordinate planning and ensure that their respective uses have minimal impact on each other, it is now clear that each landowner needs to prepare a management plan for their property that meets their respective legal requirements and administrative needs. Together, these plans provide an overall plan for the former BAAP property.

The DNR and NPS both recognized that each would need to remain flexible going forward and the FLP agreement states that the Program of Utilization may be amended as needed, if agreed to by both the DNR and NPS.

4. RESTRICTIONS AND REQUIREMENTS RELATED TO THE PROPERTY DEEDS

The SPRA property has been transferred from the National Park Service to the DNR in a series of deeds that stipulate several conditions related to future use of the parcels. The primary restrictions and requirements are summarized here:

- Reasonable public access to the Thoelke Cemetery from a public road must be provided. No buildings or other structures may be constructed within 90’ of the cemetery.
• The property is subject to an easement for railroad use (see below).

• The property is subject to easements for electric, gas, telephone, water and sewer utilities.

• The roads whose centerlines represent boundaries between landowners are open for use by both landowners (see below).

• The Army retains the right to enter the property for any purpose as long as it owns any portion of the former BAAP or to address any remedial, corrective, monitoring, testing or response action needed. As long as the Army is responsible for the operation and maintenance of the landfills on the property, the Army also retains the right to excavate and remove clay from any portion of the property that is needed to address landfill management issues.

• The property shall be used and maintained exclusively for public park or recreation purposes in perpetuity as set forth in the program of utilization that was part of the DNR’s Federal Lands to Parks program (FLP) application.

• The property may not be sold, leased, assigned or otherwise disposed, except to another government agency and with the approval of the Secretary of the Interior. The DNR may enter into agreements with third parties to provide recreational facilities and services compatible with the FLP application and any amendments to that document.

• The development of facilities on the property shall comply with the requirements of the American with Disabilities Act (ADA).

• Groundwater under certain portions of the property is contaminated. Groundwater under any portion of the property may not be used for any purpose without the approval of the Army.

• Some portions of the property have restrictions on actions related to digging or disturbing the soil including, but not limited to, raking, scratching, scraping, tilling, excavating, drilling, trenching, or plowing. These areas include: the Deterrent Burning Ground, Landfill #4, Landfill #5, the Oleum Landfill, the New Acid Pond, the “Geotube” dredge material disposal site, and the easement associated with any process sewer pipeline.

• Some portions of the property were treated for contamination down to a depth of four feet but the possibility exists that contaminants may still exist below this level. As a result, these areas may not be used in ways that disturb the soil below four feet.

• Two portions of the property are closed to public access – the main landfill in the Rocket Area and the Geotube site in the Magazine Area.

5. RAIL LINE EASEMENT

The Wisconsin Department of Transportation (DOT) purchased a permanent easement along the main north-south rail line that runs through the BAAP property, including approximately 2.5 miles that runs across, or along the border of, the parcels transferred to the DNR. The DOT and the Wisconsin River Rail Transit Commission subsequently entered into an interim trail use agreement with the DNR allowing for use of the corridor as part of the State’s rail-trail network. The lease is subject to possible future reconstruction and reactivation for rail service.
6. RAPID ECOLOGICAL ASSESSMENT (REA)

The Wisconsin Natural Heritage Inventory program conducted an evaluation focusing on rare plants, selected rare animals, and high-quality natural communities at SPRA.\(^2\) The assessment identified two areas (SPRA Baraboo Hills Woodland and SPRA Prairie and Savanna) that warranted high protection and restoration considerations in the master plan development. These areas, known as Primary Sites, were identified because they generally encompass the best examples of rare and representative natural communities, documented occurrences of rare species populations, or opportunities for restoration or connections to nearby areas. In addition, the REA identified three other high priority sites; two focused on grassland birds and one focused on shrubland birds.

The REA is available on the Department’s web site.

7. ENVIRONMENTALLY-RESTRICTED AREAS AND ISSUES

The site’s former use as an industrial complex resulted in spills of liquids with some level of toxicity. More problematic were the disposal methods used for various materials used in production. Although the Army and its contractors used methods common at the time, it is now understood that these disposal practices inadvertently resulted in contamination of soils and the underlying groundwater. The Army has spent over $200 million removing buildings and remediating contamination issues. As a result, only a small number of sites have restrictions on their future use. The environmentally-related issues and restrictions are described here:

   a. Groundwater

Three plumes of groundwater are contaminated due to previous disposal practices or spills. The areas where contamination occurred include the Propellant Burning Ground, Deterrent Burning Ground, Rocket Paste Area, and the fuel oil release site near the former powerhouse (near the main gate). Approximately 200 monitoring wells have been placed near and down-gradient of these sites, both on and off the BAAP property to monitor groundwater contamination. It is possible that additional monitoring wells may be installed in the future. The Army retains the permanent right to access all parts of the property to monitor existing or future wells. Although recreational use around these wells is not prohibited or restricted, the Department may need to take measures to prevent damage to the above-ground well casings. A map of the locations of the contaminated groundwater plumes and the existing monitoring wells is located on the DNR web site. The DNR must receive approval from the Army before using groundwater under SPRA.

   b. Landfills, capped sites, and clean up areas

Eleven landfills or sites that are capped exist on the BAAP property, with seven on SPRA. The caps of all sites are required to be protected and maintained in grass cover. The Army is responsible for maintaining and monitoring the landfills and capped sites. Although people can walk on most of the landfills, no activities that could compromise their surfaces are allowed. The main landfill is closed to all public access. In addition, in parcel M2 is a set of buried “Geotubes” that contain contaminated sediment dredged from Gruber’s Grove Bay. The Geotube site is closed to all public access.

As noted above, some portions of the property were treated for contamination down to a depth of four feet but the possibility exists that contaminants may still exist below this level. As a result, these areas may not be used in ways that disturb the soil below four feet.

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\(^2\) The REA also included lands that were recently transferred to the Ho-Chunk Nation.
c. Final Creek – Settling Ponds – Spoils Disposal area

The topography of the BAAP property tilts slightly southward and, combined with a series of ditches and sewer lines, a large portion of the property drained to a small swale at the south end of the Magazine Area (M1). This swale contained four settling ponds which were dredged in the 1970s to remove contaminated sediments. These sediments were placed in five spoil disposal sites here. The entire Settling Ponds area now meets the environmental standard for recreational use.

8. ACCESS INTO THE MAIN PART OF SPRA

Based on the distribution of existing roads on or along the borders of DNR parcels, road access to the main part of SPRA is limited to only about one mile from USH 12. Other options to access the main part of the property using existing roads require access across either DFRC lands or HCN lands. The DNR will need to work with DFRC and HCN to identify which, if any, roads on their lands they would be amenable to allowing long-term public use to access SPRA and the legal mechanism to permit this use. Another option would be to construct new roads in the Gateway Corridor on DNR lands.

9. ROADS

Over 150 miles of concrete, asphalt, and gravel roads were constructed on the former BAAP, including a perimeter road that encircles the plant. Today, most are in fair to poor condition. Those in the best condition tend to be those that have been most heavily used to transport the demolished buildings to the main landfill (most of these roads were converted to gravel to hold up to heavy equipment and have been periodically re-graded as needed). Many of the roads or road bases could be re-purposed for different types of trails.

Department ownership boundaries are often located down the middle of roads. The deeds for the parcels that have been transferred provide for the full use of these border roads by both landowners. The DNR will need to work with DFRC and HCN to identify which border roads to maintain either for public access or management purposes, and how responsibility for repair and upkeep will be allocated.

10. CEMETERIES

Three cemeteries existed on the BAAP property prior to the Army’s acquisition of land; no burials are believed to have taken place since 1942. The cemeteries will be maintained by the Town of Sumpter. The Thoelke Cemetery is located in the M3 parcel, in the northeastern section of the former Magazine Area. The Pioneer Cemetery is located in the O6 parcel in the north central part of the BAAP. The smallest burial site, the Miller site, is located in the northwest section of BAAP. Both the Pioneer and Miller sites are on HCN lands.

11. REMAINING BUILDINGS

Of the over 1,400 buildings that were erected as part of plant operations, nearly all have been removed. Although only a handful of structures remain, remnant building materials remain scattered around the former building sites in the form of various types of rubble. The remaining buildings on SPRA are described here along with associated limitations and intended future uses.

a. Building 207

Located near the main entrance off of USH 12, this building has office space, a meeting room, bathrooms, and storage. The Badger History Group was using the meeting room for a small museum, but with the transfer of the ownership of the building to the state, the building is required to meet accessibility codes in order to be open to the public. As a result, the museum was closed to the public. Updating the building to meet required accessibility and to address some safety and structural issues is estimated to cost approximately $100,000.
b. Weigand’s Bay Pump House

The former Pump House on Lake Wisconsin has largely been torn down and all contaminants have been remediated. A portion of the remaining structure, a concrete frame, could provide the foundation for a fishing platform or pier on Weigand’s Bay. The water depth along the structure is approximately 20 to 30 feet and the bay is known to hold large populations of pan and game fish. The structure provides an opportunity to create a high quality fishing experience for people with accessibility limitations. DNR lands on the peninsula abut land owned by the Town of Merrimac. There is not contiguous public ownership from the Pump House to the rest of the SPRA property.

c. Bunkers

At the Department’s request, five storage bunkers in the former “Nitro” area (P2) have been left to provide potential bat hibernation sites. The bunkers provide stable temperatures and high humidity, favorable conditions for bat hibernation. Unlike caves or other natural hibernation sites, the bunkers could be cleaned and disinfected to reduce exposure to the fungus that causes white-nose syndrome. The bunkers can also be sealed to prevent disturbances to hibernating bats. Although they present some safety issues associated with the drop-off from the top, the bunkers do not have any contamination issues and do not have use restrictions.

d. Storage and other buildings

Four buildings remain on the Department’s lands. The largest, south of the Oleum landfill, is approximately 100’ by 300’ and is partly used by DFRC to store hay in exchange for DFRC allowing the bunkers on their land to be used for bat hibernation and research (rather than hay storage). Structurally, this building is in generally good condition, although a number of repairs are needed. The other buildings, which are near the main entrance, include a pair of “Quonset Hut” structures and an open-sided storage building. The buildings do not have any contamination issues or use restrictions.

12. RESERVOIRS

Operation of the plant required massive amounts of water. The Army built two large reservoirs (four and six million gallons) about halfway down the South Bluff on the northern boundary of the property. The concrete reservoirs remain and are filled to different depths. Currently the only source of water is from precipitation and groundwater. The valves that drain each reservoir are closed and inoperable. The west reservoir appears to hold about three feet of water, likely due to cracks in the concrete at about this level. The larger east reservoir has been nearly full for many years. A six-foot fence has been erected around the reservoirs as a safety precaution. The east reservoir holds approximately 1,200 neotenic salamanders.

13. FARMING AGREEMENTS

Currently, the Department has farming agreements with the DFRC covering about 150 acres of land, in 9 fields, to incorporate into their crop rotation. The fields are planted in alfalfa/grass, winter wheat, corn, and soybeans. While there was extensive grazing in the past (prior to the Department receiving the parcels), currently no grazing occurs on Department lands. In addition to the acres the DFRC currently rents, they have expressed interest in potentially renting additional acreage from the DNR for crops, bedding material, or grazing. DFRC has also assisted the Department by mowing and spraying herbicides to help maintain the roads and road shoulders on Department lands.
14. WISCONSIN ARMY NATIONAL GUARD TRAINING USE

The BAAP property has served as a training site for military rotary wing aircraft (helicopter) from the Madison-based unit of the Wisconsin Army National Guard for many years. The BAAP site is desirable from the Guard’s perspective because it provides a tactical flight training area for aviation crewmembers in relatively close proximity to their home base (the next closest flight training area is Fort McCoy). Training use of the property includes high and low level flying, night flights, landings in different settings, and moving concrete-filled barrels to mimic transporting supplies.

The Department is committed to working with the Guard to find solutions for continued training use at the former BAAP that are not incompatible with the primary purposes of the property. The Department and the Guard are continuing discussions about future uses which could include developing a helicopter training landing zone within the west end of the fenced area around the main landfill.

15. LAKE WISCONSIN OVERLOOK

Along the southeastern corner of the property is an approximately 50-acre parcel between STH 78 and Lake Wisconsin. The DNR’s ownership doesn’t extend to the water (Wisconsin Power & Light owns the sliver of land along the shore). Given the very steep hillside along the river here, not having contiguous ownership to Lake Wisconsin is not relevant since there is not a practical way to provide shore access. With some modest tree trimming, this parcel would have a fine view of Lake Wisconsin and the opposite hillside.

16. DRINKING WATER

The buildings on the HCN and DNR lands currently source their drinking water from a Bluffview Sanitary District well. The Department will work with the BVSD to determine future options for the DNR’s continued use of water from this well. Alternatively, the Army has proposed constructing a public water supply for the overall area to address long-term drinking water needs.

17. OTHER ISSUES THAT AFFECT THE FUTURE USE OF THE PROPERTY.

The DNR’s management of the property is subject to the Americans with Disabilities Act and the National Historic Preservation Act.
E. **Regional context**

1. **OTHER PROTECTED LANDS**

   SPRA sits in close proximity to other publicly-accessible lands. Other conservation properties within 15 miles include:

   **State Parks**
   Devil’s Lake  
   Mirror Lake  
   Natural Bridge  

   **State Wildlife Areas**
   Dell Creek  
   Lodi Marsh  
   Pine Island  
   Waunakee  

   **State Fishery Areas**
   Baraboo River (Remnant)  
   Hinkson Creek  
   Leech Creek (Remnant)  
   Lodi Spring Creek  
   Rowan Creek  

   **Other properties**
   Baraboo Hills State Recreation Area  
   Ice Age Trail  
   Lower Wisconsin State Riverway  
   Marx-Fish Lake Natural Resource Site  
   Riverland Conservancy preserves  
   US F&WS Waterfowl Production Areas  

   **State Natural Areas**
   Ableman’s Gorge  
   Baraboo River Floodplain Forest  
   Baxter’s Hollow  
   Cady’s Marsh  
   Devil’s Lake Oak Forest  
   East Bluff (DLSP)  
   Fern Dell Gorge  
   Ferry Bluff  
   Gibraltar Rock  
   Hemlock Draw  
   Honey Creek  
   Lodi Marsh  
   Lower Narrows  
   Lost Lake  
   Mazomanie Bottoms  
   Mazomanie Oak Barrens  
   McGilvra Woods  
   Natural Bridge and Rockshelter  
   Pan Hollow  
   Pewits Nest  
   Pine Hollow  
   Pine Island Savanna  
   Parfrey’s Glen  
   Schluckebier Prairie  
   South Bluff/Devil’s Nose  

   Many SNAs are nested within other larger properties, including several that are owned by The Nature Conservancy or other private conservation organizations.

2. **LAND USES AND TRENDS**

   With a wealth of natural resources, easy access to the Madison metropolitan area via Interstate 90-94 and USH 12, and a varied and scenic landscape, not surprisingly Sauk County is drawing many new residents. Indeed, over the last decade the county’s population grew at twice the state’s rate of growth. On a percentage basis, the Village of Lake Delton and the Town of Dellona have experienced the most rapid growth over the last ten years. Population growth has resulted in more jobs, more homes and more development pressures in different parts of the county. In turn, this has led to the price of agricultural lands increasing significantly faster in Sauk County (at an 11% annual average increase for the last decade) than in the state (6.6% annual average increase). The price of forestland in Sauk County has also risen more than the state as a whole over the last ten years.

   Land use in Sauk County and the surrounding counties is dominated by farming which are typically modest-sized operations. About two-thirds of the land in Sauk County is in farms with an average farm size of about 185 acres.
Over the last decade the number of farms in the county has gradually increased while the average size has declined a corresponding amount. Although the amount varies somewhat from year to year, just over half the land in farms in Sauk County is in crop production, about a quarter is in woodland, and about 10% is in pasture. The remainder is in farmsteads, ponds, roads and various structures.

3. **RECREATIONAL-RELATED**

Understanding the supply and demand of recreational resources is an important component of planning for recreational opportunities. If there is a demonstrated shortage of a particular resource, it is important to know what the future demand for that resource will be. As part of developing the Statewide Comprehensive Outdoor Recreation Plan (SCORP) the Wisconsin DNR conducted a series of town meetings across the state in 2005. These meetings collected over 1,400 responses about citizen's perceptions of recreation issues and barriers to recreation. The 2005 SCORP details recreational issues mentioned by respondents from the Southern Gateway Region (in which SPRA resides):

- Budget constraints on park and recreation programs
- Increased competition for natural resources
- Increasing ATV usage and associated impacts
- Increasing multiple-use recreation conflicts
- Lack of maintenance on parks and recreation areas
- Lack of park and recreation staff
- Overcrowding
- Poor water quality impairing recreation
- Protecting silent sport areas

These results show the need for well-maintained public lands and park facilities in the region which allow diverse recreational activities while providing an exceptional user experience with minimal conflicts between incompatible uses.

Another way to understand this demand is by gauging user perceptions of a particular recreation amenity. The 2005 SCORP also assessed visitor perceptions of their top recreation needs. For the Southern Gateways Region, these needs include more:

- ATV usage opportunities
- biking trails
- camping opportunities
- canoeing opportunities
- cross-country skiing opportunities
- hiking and horse trails

4. **ECOLOGICAL AND HABITAT-RELATED**

Eastern Sauk County sits at the confluence of three major ecological zones. To the west lies the unglaciated Western Coulee & Ridges, a landscape characterized by steep-sided valleys and many cool, clear streams supporting abundant trout populations. To the north lies the Central Sand Plains, a wide, flat, sandy region that was once mostly the bed of the enormous Glacial Lake Wisconsin. To the east lies the Central Sand Hills, an area
dominated by the rolling and somewhat random topography that typifies the end and ground moraines left behind by glaciers.

This part of the state has opportunities to provide a variety of important ecological outcomes. Some of the major opportunities for habitat management and restoration include dry and dry-mesic prairies, oak openings, oak woodlands, and southern dry-mesic forest. One of the most prominent features of the region is the Baraboo Range – a large, ancient, quartzite monadnock that rises 500 feet above the surrounding plains. The Range supports the largest block of hardwood forest in southern Wisconsin and is critical habitat for many species, in particular forest-interior birds.
CHAPTER IV: ANALYSIS of the ENVIRONMENTAL IMPACTS

A. Introduction and assumptions

This section of the document describes the Department's assessment of the anticipated impacts of the proposed management and public use of SPRA. The purpose of this analysis is to inform decision-makers and the public of the anticipated effects on the quality of the human environment of the proposed management and public use of SPRA. The next chapter describes the alternatives that were considered but not included and their potential impacts. The assessment of impacts is an informational tool that does not compel a particular decision by the Department or the Natural Resources Board or prevent either from concluding that other values outweigh the environmental consequences of a proposed action or project.

This assessment has been prepared consistent with National Environmental Policy Act (NEPA) and Wisconsin Environmental Policy Act (WEPA) requirements for environmental review. Although there are no federal permits or approvals required for the DNR to manage and operate the SPRA property, the Department’s intent is that this assessment of potential impacts enables the National Park Service to understand how the proposed management of SPRA meets the DNR’s application to the Federal Lands to Parks program.

This analysis only addresses the impacts that are believed likely to occur if this master plan is implemented, not impacts that have resulted from previous actions or land uses at the property. NR 44, Wis. Adm. Code requires that property master plans are evaluated every 15 years and revised as needed. As such, this section only addresses those impacts, positive and negative, that are expected to occur over the next 15 years. Finally, this assessment is based on the best professional judgment of Department staff. The DNR has a long history and in-depth knowledge of the SPRA property and surrounding BAAP lands. In addition, the Department has extensive experience managing, restoring, and operating conservation and recreation properties. It is from this base of knowledge and experience that this analysis is drawn.

Many of the expected impacts result from visitation and recreational use of the property. The Department expects visitation to the property to be significantly driven by the amount and quality of recreational facilities present. As a result, it is likely that the number of visitors to SPRA may be limited initially and increase over time as a visitor center, trails, picnic shelters, overlooks, education and interpretation kiosks, and other features are built.

On July 30, 2012 at a public open house meeting, the public was asked to identify issues to include in the planning and review process. The results of that meeting were summarized in a document prepared in September, 2012 and are incorporated into this analysis.

Federal approvals, if any, consistent with the Department’s application to the Federal Lands to Parks program and associated Program of Utilization, will be sought as needed.

All necessary state and federal permits will be acquired before the Department proceeds with the development of a project within SPRA. Examples may include complying with state and federal wetland laws in the form of Water Quality Certification(s) to allow work or limited fill in wetlands for the purposes of overall wetland enhancement or restoration.
CHAPTER IV: Analysis of the environmental impacts

B. Anticipated impacts to the human environment

1. POTENTIAL IMPACTS TO THE PHYSICAL ENVIRONMENT

   a. Land use

   Given the demand for opportunities to participate in outdoor recreation activities in reasonably close proximity to cities and villages, combined with improvements to USH 12, implementation of this master plan may result in more people moving to the area than is currently projected by the US Census Bureau. This could also increase demand for housing greater than is currently projected. In addition, the number of visitors to the area is expected to increase if the plan is implemented, which could increase the number of retail and service enterprises. Both of these impacts could increase the conversion of some undeveloped or under-developed lands into developed properties, potentially in particular along USH 12. Local units of government may need to adjust their land use plans to reflect changing development pressures that result from public use of SPRA.

   b. Geological and glacial resources

   If the proposed master plan is fully or partially implemented, it is anticipated that there would be only minimal impacts to the geological or glacial resources of the SPRA property. The Department proposes to highlight the geological and glacial features at SPRA to visitors. Although facility development (including trails) may result in some site-specific impacts to these resources, they are expected to be minimal, especially relative to previous disturbance at the property.

   c. Air quality

   If the proposed master plan is fully or partially implemented, it is anticipated that air quality may be impacted by a couple of factors. First, the Department proposes to periodically conduct prescribed fires in much of SPRA over time. Most fires would be conducted in the spring with some also being conducted in the fall. Some of these fires may be several hundred acres in size or larger. It is the Department’s intent to conduct these prescribed fires when the prevailing wind direction will keep smoke over SPRA until it dissipates. Although it is possible that some smoke may travel over nearby residences and neighboring landowners, the Department expects these impacts to be minor and temporary.

   Concern has been raised regarding the potential release of toxic chemicals or materials during the use of prescribed fire at SPRA. All of the land within SPRA has been cleared of all known contaminants to a depth of four feet. Any contaminants below four feet would be materials that are unlikely to be taken up by plant roots. As a result, the Department believes that the use of prescribed fire at SPRA will result in the release of materials similar to prescribed fires at other properties around the state. It is likely that the existing and future road and trail networks will provide adequate fire breaks. If additional fire breaks are needed, the Department will evaluate potential soil disturbance areas to ensure that no known contaminants would be released.

   A second source of impacts to air quality is likely to be vehicle traffic on the gravel roads. Many of the roads open for vehicle use on SPRA will, at least initially, remain surfaced with gravel and, depending on the amount of traffic, may generate localized dust conditions. The Department expects these impacts to be similar in scope to those that result from traffic on nearby gravel roads.

   Increased vehicle traffic resulting from visitors is expected to be only a small incremental increase to the existing traffic loads in the general area. Thus, the Department does not expect there to be a significant impact to air quality from visitors driving to and around SPRA.
CHAPTER IV: Analysis of the environmental impacts

The re-purposing of trails and roads for dual-sport motorcycles up to six days a year will result in emissions from these vehicles. If 100 riders participate using bikes that average 60 mpg and each goes 60 miles while at SPRA, then each of these six days will result in emissions associated with using 100 gallons of gas. In addition, dust is likely to be created during these events, although the magnitude is not expected to be significant.

d. Water resources

If the proposed master plan is fully or partially implemented, it is anticipated that impacts to water resources would be beneficial. The most significant positive impact could be the collaborative efforts of the DNR and HCN to restore the hydrology of the streams emanating along the south bluff of the Baraboo Hills. The master plan proposes that these creeks will be restored to flow out onto the flat outwash plain and drain into the sandy soils on HCN lands. This in turn will help to replenish groundwater.

Implementation of the master plan is not expected to impact the quality of groundwater or waters in Lake Wisconsin.

2. POTENTIAL IMPACTS TO BIOLOGICAL RESOURCES

a. Terrestrial habitats and species

The proposed restoration and management of terrestrial habitats are anticipated to result in increases to populations of native plants and animals, particularly rare and declining species associated with grasslands and savannas. However, implementation of the plan is not likely, by itself, to increase populations of any Species of Greatest Conservation Need to the extent that they would be removed from this status. The quality of the grassland, savanna, and forest habitats at SPRA are expected to improve, resulting in increased diversity in both species composition and structure.

The proposed plan should also have a noted positive impact on populations of game species, although not all game species would be affected equally. Species that respond directly to the availability of restored grasslands and savannas (such as pheasants and, to a lesser extent, small game animals such as rabbits) should increase with restoration and management of additional habitat. Species that are more flexible and adaptable in their habitat needs (such as deer, turkey, raccoon and fox) are expected to show populations increases as habitat is restored. Overall, it is expected that game populations will significantly benefit from implementation of the proposed plan, although population responses will vary depending on the species and applied habitat management practices.

The construction and use of recreational facilities is expected to result in impacts to terrestrial resources. The development and operation of trails, day use areas, educational and interpretive facilities, parking lots, and a visitor center may adversely impact terrestrial habitats and species. However, impacts are expected to be localized and minimal.

The hiking, biking, and equestrian trails may impact the habitats through which they are located. Trails can provide easier access into habitats by predators. Although invasive species are prevalent throughout SPRA, the development and operation of trails may also result in the spread of some invasive plants into areas where they do not exist. However, the property is currently heavily fragmented with roads and former rail lines and their removal, combined with the restoration of large blocks of habitats, will result in an overall net decrease in fragmentation.

Depending on the level of participation, trail use by hikers, recreational and mountain bikers, snowshoers and skiers, horseback riders and horse cart drivers, and other non-motorized users may inadvertently disturb
animals at sensitive times in their life cycles (e.g., nesting birds). Auto traffic on designated roads may affect terrestrial wildlife, but the impacts are not expected to be significant.

The proposed re-purposing of biking and equestrian trails and roads for dual-sport motorcycles for six days may disturb the daily routines of animals to some degree. By limiting the number of special events and their timing, the duration and magnitude of the impacts to wildlife are not expected to significantly affect these animals or their use of SPRA.

Rocket launching at the Bong State Recreation Area appears not to have a significant impact on wildlife use of the surrounding area. Indeed, one of the largest populations of Henslow’s Sparrow (a State-Threatened bird) on state park lands occurs in close proximity to the rocket launch area at Bong. The launching of sport rockets for up to 10 days a year is likely to disturb animals in the immediate area during these days, however the duration and magnitude of this impact is not expected to significantly affect these animals or their use of SPRA.

The proposed management plan seeks to minimize impacts to night light pollution and as a result is expected to benefit wildlife. Combined with DLSP, this block of conservation land will represent a large “dark sky” opportunity.

b. Aquatic and wetland habitats and species

Only a small amount of open water and wetland occur on SPRA and less than 10 acres of scattered wetlands are proposed to be restored. Despite this limited acreage, these wetlands may be significant for amphibians, which could concentrate in them during breeding seasons. Along with terrestrial habitat improvements, these small wetlands could lead to increases in local amphibian populations. As such, a small but positive impact to these habitats is expected from implementation of the plan. Restoration of the streams flowing off the South Bluff is expected to improve conditions for invertebrates and several non-game fish in these systems.

3. POTENTIAL IMPACTS TO CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES

None of the proposed developments or actions in the master plan are expected to adversely impact known occurrences of cultural, historical, and archaeological resources on SPRA. In the course of implementing this master plan, some actions will require the disturbance to soil. Prior to any surface disturbance, the Department will review the most up-to-date information on the known locations of cultural, historical, and archaeological resources and take measures to avoid impacts to them. Thus, impacts to occurrences of cultural, historical, and archaeological resources from the development of facilities at SPRA are expected to be minimal.

The proposed master plan seeks to protect, restore, and manage the many cultural, historic, and archaeological resources at SPRA. The DNR intends to integrate some of these resources into visitor experiences and to educate the public regarding their significance and value. A potential outcome is that the public will have a greater understanding and appreciation of the cultural, historical, and archaeological resources of the property as well as southern Wisconsin. Another potential outcome is that some resources may be vandalized or inadvertently damaged by the public.

Discoveries of new archaeological or historical sites in the course of implementing the plan would be reported to the State Historical Society. If any sites of archaeological or historical significance could be affected by development or management activities, the Department would comply as applicable state law (Sec. 44.40 State Stats.) or federal law (Section 106 of the National Historic Preservation Act) by submitting specific site information and any relevant management plans to the State Historical Society.
The Department anticipates that the overall impact to cultural, historic, and archaeological resources at SPRA will be positive.

4. POTENTIAL IMPACTS TO FARMLAND AND FARMING

If the proposed master plan is fully or partially implemented, it is anticipated that the approximately 150 acres on SPRA that are currently farmed in row crops by the DFRC will be converted over time to native habitats (primarily grasslands and oak openings). As a consequence, DFRC may seek to replace this acreage by renting additional farmlands from nearby landowners, by cropping some of their lands in the BAAP that are currently uncultivated, or some other approach. The conversion of cropland at SPRA to native habitats is expected to have a minimal impact on farming and farmland in the area.

The master plan also calls for incorporating grazing on lands as a means to restore and manage habitats. The Department would contract with local farmers or DFRC for this grazing. This is likely to result in increased opportunities for local goat or cattle graziers. In addition, the master plan authorizes the conversion of degraded lands to crop use for several years as part of the process to restore habitats. This conversion of lands to crop use, typically for five to ten years, is expected to have a minimal but positive impact on farming in the area.

The inclusion of research on grazing systems and conservation farming as habitat management techniques (particularly their use to reduce invasive shrubs) may substantially benefit not only the habitats at SPRA but also other lands affected by invasive plants in other parts of the state as knowledge gained here is applied elsewhere.

5. POTENTIAL IMPACTS TO RECREATIONAL PARTICIPATION

If the proposed master plan is fully or partially implemented, there would be an increase in opportunities for the public to engage in outdoor recreation activities. Popular activities at SPRA are likely to be bird watching, biking, horseback riding, hunting, and learning about the history and cultural and ecological features of the property. Although there are several places in the general area that provide biking and horseback riding opportunities, it is possible that SPRA will be an especially popular destination for these outdoor activities.

Estimating the number of future visitors to SPRA is difficult. Although there are properties in southern Wisconsin that share some similarities to SPRA, this property is unique in many ways. Further, the Department has only limited data on visitation patterns of nearby properties. As a result the Department is able to only roughly estimate the number of visitors that may come to the property if the master plan is implemented.

The Department estimates that total annual visitor-days\(^3\) at SPRA may be in the ranges listed in Table 4. These estimates are based on the recreation facilities that are proposed, the anticipated initial interest in visiting the property, and the visitation at nearby park and recreation properties.

The development and operation of SPRA may increase participation in outdoor recreation by local residents, either through an increase in the number of people participating or an increase in the frequency of their participation. Although SPRA will draw visitors from elsewhere in the state and Midwest, it is not expected to significantly increase participation in outdoor recreation in these broader populations. Instead, the property is likely to draw visitors that would have visited other properties.

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\(^3\) Visitor-days are the total number of people that visit the property in a day, regardless of the length of their stay or the number of recreation activities in which they participate.
The proposed re-purposing of the biking and equestrian trails for dual-sport motorcycle use will result in a broader range of visitors to the property and may result in a minimal overall increase in total visitor-days. However, it will displace other visitors from using these trails during the proposed six days. In addition, this motorized use may adversely affect other visitors’ use and enjoyment of other portions of SPRA that remain open. The Department believes the planned motorized use is unlikely to significantly impact other visitors’ overall use of and satisfaction with SPRA and thus is unlikely to significantly affect overall visitation patterns.

6. POTENTIAL IMPACTS TO SOCIAL AND HEALTH CONDITIONS

There is considerable research indicating that participation in outdoor recreation can lead to improved health outcomes. If the development and operation of SPRA increases participation in outdoor recreation, people engaged in these activities are expected to realize improvements in their overall health.

The prescribed fires conducted at SPRA will be conducted so that the smoke will not travel over nearby residences. Smoke may affect people visiting SPRA or DLSP, however these events would be of limited duration and scope and thus any impacts are expected to be minimal.

During the days that dual-sport motorcycles are permitted on SPRA, an increase in noise will be generated. This motorized use may adversely affect other visitors’ use and enjoyment of other portions of SPRA that remain open. The noise may also affect neighboring landowners. However given the distance that most neighbors are from SPRA, and that on average over 10,000 cars and trucks a day travel the adjacent stretch of USH 12, this impact is not expected to be significant.

As noted in the grazing section on page 43, soil contamination issues and the potential for bioaccumulation of toxins in animals on SPRA have been evaluated by the Wisconsin Department of Health Services. The DHS report concluded that regular consumption of wild game from SPRA would not pose a human health risk. The report, incorporating conservative risk estimates, also indicated that:

- Regular consumption of agricultural grazing animals with a high percent fat content (e.g., cattle and sheep) from SPRA may pose a human health risk to both children and adults.

- Regular consumption of agricultural grazers with a lower percent fat content (e.g., bison and goat) from SPRA is unlikely to pose a human health risk to either children or adults.

The report noted that the elevated risks calculated for cattle and sheep are likely improbable given the difference between the assumptions and actual conditions on the property and people’s eating habits. As a further precautionary measure, the Department proposes to require that cattle (or other grazing animals with similar fat content) spend no more than two months a year in the Settling Ponds area (MA 5). In addition, the Department will provide educational information to graziers on the soil contaminants of concern present at SPRA and their potential for bioaccumulation in animals that graze on the land.

Eating edible plants (including fruits) and mushrooms from SPRA does not present a human health risk.

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated annual visitor-days</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>20,000 to 40,000</td>
</tr>
<tr>
<td>2016</td>
<td>10,000 to 20,000</td>
</tr>
<tr>
<td>2017</td>
<td>10,000 to 20,000</td>
</tr>
<tr>
<td>2018</td>
<td>10,000 to 20,000</td>
</tr>
<tr>
<td>2019</td>
<td>10,000 to 20,000</td>
</tr>
<tr>
<td>2020</td>
<td>20,000 to 40,000</td>
</tr>
<tr>
<td>2021</td>
<td>20,000 to 40,000</td>
</tr>
<tr>
<td>2022</td>
<td>20,000 to 40,000</td>
</tr>
<tr>
<td>2023</td>
<td>30,000 to 50,000</td>
</tr>
<tr>
<td>2024</td>
<td>30,000 to 50,000</td>
</tr>
<tr>
<td>2025</td>
<td>30,000 to 50,000</td>
</tr>
<tr>
<td>2026</td>
<td>40,000 to 60,000</td>
</tr>
<tr>
<td>2027</td>
<td>40,000 to 60,000</td>
</tr>
<tr>
<td>2028</td>
<td>40,000 to 60,000</td>
</tr>
<tr>
<td>2029</td>
<td>50,000 to 75,000</td>
</tr>
</tbody>
</table>
The level of contaminants remaining in the soil is below the established clean-up standards for visitors or staff that work continually at the property (which assumes incidental ingestion of soil, inhalation of particulates emitted from soil, and dermal exposure).

7. POTENTIAL IMPACTS TO THE LOCAL AND STATE ECONOMY

a. Financial costs of implementation

Estimating the costs of the proposed facilities and anticipated habitat management and restoration is difficult for several reasons. From the perspective of the proposed facilities, actual Department costs will be affected by the amount of assistance received from partners, a potential friends group, volunteers, and donations from local businesses. In addition, the Wisconsin Army National Guard has expressed interest in potentially using the construction and deconstruction needs at SPRA as part of their training exercises. From a habitat perspective, actual costs will vary based on the responses to previous treatments (particularly grazing), changing costs of materials, ability to offset management costs through the sale of timber or biomass, assistance received from volunteers, and other factors.

SPRA is projected to attract tens of thousands of visitors a year. These visitors may encourage the development of new businesses or may lead some existing businesses to expand. In addition, SPRA may result in additional housing demand in the area. Together, these changes may require local government to fund improvements or expansions to roads, schools, water and sewer services and other types of infrastructure.

Estimated costs of removing or remediating existing structures and facilities

Based on industry standard costs associated with construction and demolition, the Department developed the following general estimates of addressing the existing structures:

- Removing roads. There are approximately 50 miles of roads that could be removed and the ground restored. This material may have value to area contractors and the Department expects that some or all of this material could be traded to local construction businesses for the cost of removing the material.

- Cracking, draining, and filling the reservoirs with sand/gravel. In 2013, the Department estimated this work would cost approximately $2.3 million, including the repair work that would be needed on the road leading up the reservoirs following the trucking of approximately 70,000 yds$^3$ of fill material up to the site.

- Converting the remaining structure at the former pump house to a fishing platform or pier. Contaminants at the site have already been addressed. In 2007, the Department estimated that addressing the underwater portion, removing the upper structures and developing an ADA compliant fishing platform or pier will cost approximately $606,000.

- Building 207. The estimated cost to upgrade the utilities, convert the entrance and bathrooms to ADA standards and address structural problems is $100,000.

The total cost to address existing structures and facilities is just over three million dollars.

Estimated costs of establishing the proposed facilities

As with any property, there are often unanticipated costs that arise over time. The summary presented here includes some of the estimated construction costs. Some additional costs are not included (such as fencing,
installation of water pipes) are not included here because the amount or type are not currently known. More details of estimated costs of the proposed facilities are described in Appendix 2.

The estimated costs of establishing proposed facilities are as follows:

<table>
<thead>
<tr>
<th>Facility</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trails</td>
<td>$1,075,000</td>
</tr>
<tr>
<td>Roads and parking lots</td>
<td>$1,636,000</td>
</tr>
<tr>
<td>Visitor Center</td>
<td>$575,000</td>
</tr>
<tr>
<td>Entrance and interpretive signs</td>
<td>$24,000</td>
</tr>
<tr>
<td>Open-sided shelters</td>
<td>$140,000</td>
</tr>
<tr>
<td>Viewing deck (Bluff Vista)</td>
<td>$45,000</td>
</tr>
<tr>
<td>Amphitheater (Bluff Vista)</td>
<td>$150,000</td>
</tr>
<tr>
<td>Vault toilets</td>
<td>$325,000</td>
</tr>
<tr>
<td>Other facilities (corral, picnic tables, grills, gates)</td>
<td>$75,000</td>
</tr>
</tbody>
</table>

**TOTAL** ............................................................................. $4,045,000

**Estimated costs of operating the existing and proposed facilities**

The Department’s operating expenses will be directly driven by the number of visitors and the degree to which the property requires ongoing oversight. Initially, the Department intends to hire limited seasonal staff, based out of Devil’s Lake State Park, to provide visitor management services and property management at SPRA. In addition, full time staff stationed at Devil’s Lake State Park will also be assigned to property management at SPRA when needed. The estimated staffing cost is approximately $15,000/year.

As facilities and trails are built in years to come, more visitors are expected. In turn, the expected operating costs and staff time will increase to approximately $95,000/year that would include a full time property manager, part time law enforcement and maintenance staff.

**Estimated costs of restoring and managing habitats**

The anticipated costs for habitat management are difficult to determine due to the range of potential management techniques that may be used as well as the increasingly large challenge posed by invasive shrubs. In addition, many portions of the property need to be intensively restored in order to re-create native habitats. In some areas, the costs associated with this type of intensive restoration are likely to be driven by the degree to which conventional row cropping in a corn-soybean rotation can be used prior to planting of native seeds.

The Department has extensive experience managing habitats using many of the techniques proposed here (e.g., prescribed fire, brushing, cutting) and less experience in other techniques (e.g., rotational grazing). The following rough estimates of costs were developed applying some of the unique conditions at SPRA with staff experiences at other properties. Factors considered included the large number of former roads that can be used as fire breaks and access routes, the lack of vegetation that can support a self-sustaining fire in some areas, the density of shrubs in some areas, and existing soil conditions.

Estimates are provided for the three major habitat types that are planned for SPRA: grasslands, oak openings, and oak woodlands.

**Estimated annual management costs:**

- Native grassland = $40/acre, treatments about every 4 or 5 years
- Surrogate/degraded grasslands = $75/acre, treatments about every other year
Native oak opening = $80/acre, treatments about every 4 or 5 years  
Surrogate/degraded oak opening = $80/acre, treatments about every 4 or 5 years  
Native oak woodlands = $80/acre, treatments about every 4 or 5 years  
Surrogate/degraded oak opening = $80/acre, treatments about every 4 or 5 years  

Estimated costs to convert surrogate or degraded habitats to native condition:  
Conversion to native grassland = $1,000/acre  
Conversion to native oak opening = $700/acre  
Conversion to oak woodland = $500/acre  

Estimated acres to convert from surrogate or degraded habitats to native condition:  
Grasslands – 664 acres over 15 years  
Oak openings – 85 acres over 15 years  
Oak woodlands – 80 acres over 15 years  

Combining these scenarios and factoring in costs for the management and restoration of minor habitats (e.g., wetlands and streams), the Department estimates that direct habitat management costs will be in the range of $75,000 to $125,000 annually over the next 15 years.

b. Financial benefits of implementation

Estimated direct spending by visitors

If implemented, it is expected that SPRA would help diversify the local economy and provide financial benefits on several fronts. One of the most obvious ways would be the direct spending by visitors engaged in different outdoor recreation activities. Research has shown that most people engaged in outdoor trips spend between $10 to $40 per person per day on travel-related items, regardless of whether they are biking, hunting, bird watching, hiking, or participating in other nature-based activities.\(^\text{31}\) People who engage in overnight trips, horseback riding, and motorized activities typically spend more than this amount (often double or more). The $10 to $40/person/day figure includes trip-related expenses (primarily food purchased both in restaurants and grocery stores, gasoline, and other items including bait, ammunition, fees, and a variety of supplies). It does not include equipment purchases (e.g., bikes, guns, cross county skis, saddles, etc.), which are typically considerably more.

Another type of spending is shopping that occurs at local stores on items not directly related to the participation in outdoor recreation activities. That is, someone might visit an area to go bird watching or biking and stop at an antique store and buy a lamp. The person didn’t buy the lamp because of the trip, but the purchase took place in the local area (as opposed to in a different area) because the trip was taken. It is unknown how much of this type of spending the establishment of SPRA would create or the resulting sales tax revenue it would generate.

CHAPTER IV: Analysis of the environmental impacts

For purposes of demonstrating what the economic benefit to local communities might be if this master plan is implemented, this assessment uses the preceding estimates of yearly visitors and assumes one-quarter would be residents from the local area that spend on average $5/visit and three-quarters would be from further away and spend on average $25/visit. Using these assumptions, it is estimated that visitation to SPRA could generate in the range of $7.5 to nearly $13 million in direct travel-related spending over the next 15 years.

In addition to the jobs this direct spending could help support (and the associated income taxes), these travel-related expenditures would also result in approximately $380,000 to $645,000 and $38,000 to $64,500 in state and county sales tax revenue, respectively.

This visitation and spending would, in turn, generate indirect spending by businesses providing supplies and services to the direct retailers. In addition, the wages and salaries paid by the directly and indirectly involved retailers and industries circulate through the economy. The economic benefits that are beyond the direct effects are known as “multiplier” or “ripple” effects and add a significant additional benefit to local communities. These multiplier effects can be calculated using a modeling system developed at the University of Minnesota, but have not been calculated for SPRA.

Estimated direct spending by the Department associated with developing and managing the property

Many of the supplies (fuel, herbicides, rakes, fence posts, etc.) that Department staff use in the management and operation of state properties are purchased from local vendors. Similarly, construction and upkeep of some facilities will likely employ local firms that will source materials locally. In addition, many of the staff that will be involved with management of SPRA live in nearby communities and contribute to these local communities through their spending. The amount of this spending is expected to positively impact the local economy but the level is unknown.

Estimated changes in property values near SPRA

Estimating potential changes in the property values near SPRA as a consequence of implementing this master plan is difficult for several reasons. Studies in other parts of the country have examined the changes in the selling prices of properties adjacent and near public conservation and recreation properties.32

Generally, property values increase next to and near conservation and recreation properties.

It is unknown if the future will follow the pattern seen elsewhere. There are many protected conservation lands in the immediate vicinity and the addition of SPRA may not result in the increases seen at other new public properties. Further, the previous use of the property as a manufacturing plant followed by many years of being idled likely affected surrounding property values. Although it is unknown how the conversion of part of the former BAAP to SPRA may affect the values of nearby properties over time, no negative impact is expected.

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c. Property taxes

When the Department acquires property, the land is exempted from property taxes. However, for lands acquired after 1992 the Department makes annual payments-in-lieu-of-taxes (PILT) to all taxing jurisdictions (county, town, school district, etc.) in an amount equal to the property taxes that would have been paid had the land remained in private ownership. In 2014, the DNR made PILT payments on 2,224 acres at SPRA (of the 3,385 acres the Department will eventually acquire). For 2014, these payments totaled $36,223 to the Town of Sumpter and $16,478 to the Town of Merrimac. The towns distributed these payments to each of the taxing jurisdictions within their boundaries (e.g., school districts, county government) following their established mill rates. Under the current law, these payments will continue and will be adjusted each year to reflect the change in the value of land in the taxation district. In addition, under the current law the Department will make PILT payments on the remaining lands when they are transferred to the state.

Over the next 15 years, if the property values in Sauk County, the Town of Sumpter, and the Town of Merrimac are constant, under the PILT program as it exists now, the Department estimates it will make payments-in-lieu-of-taxes related to SPRA totaling approximately $950,000.

8. POTENTIAL IMPACTS ON ENERGY CONSUMPTION

If the proposed master plan is fully or partially implemented, there may be an impact on energy consumption but the scale and direction is unknown.

Department staff will consume transportation fuel in conducting habitat monitoring and management as will staff patrolling the property. However, nearly all of the expected energy consumption associated with the development and operation of SPRA will be tied to the transportation fuel consumed by visitors travelling to the property.

The Department estimates that over the next 15 years, SPRA will draw an average of approximately 25,000 to 40,000 visitors each year. Although these visitors may consume fuel driving to the property, a more relevant figure is the comparative impact on energy consumption. The net consumption will be a function of what visitors would have done had they not visited SPRA. That is, if visitors to the property would have done something around their home rather than drive to SPRA, then their energy consumption visiting the property will likely be much more. On the other hand, if they would have traveled further from home than SPRA to pursue other interests, then their net energy consumption would be less. Until the Department has a clearer indication of the number of visitors and their travel patterns, it cannot accurately estimate the total net fuel use related to the property.

The proposed re-purposing of bike and equestrian trails for dual-sport motorcycles potentially could result in increased energy use. If dual-sport motorcycles get an average of 60 miles per gallon, riders travel 60 miles a day while at SPRA, and the property hosts 100 riders for each of six days, this recreational use would result in the consumption of approximately 600 gallons of gasoline. As with general visitation, if motorcycle riders would have traveled further than SPRA to participate in a riding event, then the property may result in less overall energy consumption. If, however, riders would have done something that didn’t use energy instead of traveling to SPRA and riding their motorcycle, then providing this recreational activity at SPRA will result in increased overall energy consumption.
C. **Issues related to the cumulative effects, risks, and precedent if the proposed plan is implemented.**

1. **SIGNIFICANCE OF CUMULATIVE EFFECTS**

   The cumulative effects from the proposed management of SPRA are expected to generate a long-term positive effect on the quality of the human environment. The plan’s proposed land management would also maintain and expand protection of critical ecological habitats and associated species, including Species of Greatest Conservation Need.

   The recreational facility developments proposed here would fill a demonstrated need for additional or improved recreational opportunities in southern Wisconsin. The recreational opportunities that would be created here are designed to complement each other and provide visitors with multiple experiences. In addition, there is the potential for different types of special events occurring on the property. Cumulatively, these opportunities may lead to increased recreational use of the property. In turn, this may impact native species and natural communities that are the focus of restoration and management efforts and may lead to a rise in staffing needs.

   Overall, the proposed management of SPRA is likely to have a positive, if modest, long-term impact on the local tourism economy by expansion of recreational facilities. Construction of the Great Sauk Trail (rail-trail) from Sauk City/Prairie du Sac to SPRA and continuing on towards DLSP is expected to significantly contribute to the popularity of SPRA. If the Great Sauk Trail eventually is connected to the 400 State Trail in Reedsburg, this would likely lead to additional visitation in the general region and SPRA.

2. **SIGNIFICANCE OF RISKS**

   The management and use of SPRA pose a low overall potential for risk to the human environment. No new, high risk actions are proposed, nor are any actions which involve an irretrievable commitment of resources, or actions that could not be reversed in the future. The proposed facilities are similar in nature to other trails and recreation facilities found elsewhere in Wisconsin. The proposed land management actions would be a continuation of existing approaches to habitat management used by the Department throughout southern Wisconsin.

   A proposed action which some people may consider a higher risk activity is the use of fire as a habitat management tool. While the use of prescribed fire potentially increases the risk of a burn turning into a wildfire, by reducing fuel loads over time, periodic prescribed burns also reduce the chances of a wildfire turning into a catastrophic, uncontrolled event. The risks associated with prescribed burns would be mitigated by using experienced staff to conduct the burns, burning only under low risk conditions, having appropriate firebreaks pre-established, and having fire-fighting equipment and personnel present on site during burns.

3. **SIGNIFICANCE OF PRECEDENTS**

   To be sure, SPRA has a very distinctive past and portions of the proposed management plan reflect the unusual opportunities and challenges here. However, the Department believes that many aspects of the proposed master plan, for example providing a range of recreation experiences, managing grasslands and savannas, and working with partners, are common to other DNR properties. The one new recreation opportunity proposed here is the re-purposing of trails and roads for use by dual-sport motorcycles. The Department will evaluate the popularity and outcomes of this use and assess the practicality of applying what is learned here to other properties.
D. **Degree and nature of controversy regarding the proposed master plan.**

1. **ISSUES OF PUBLIC CONCERN AND CONTROVERSY THAT WERE RAISED PRIOR TO THE RELEASE OF THIS DRAFT MASTER PLAN.**

The following issues were raised as concerns or controversies by the public during the initial phases of developing the draft master plan:

a. **Motorized recreation and a shooting range.**

The first phase of the master planning process focused on developing a Regional & Property Analysis, which was released in 2012 and described the attributes and features of the property and the broader context within which it sits. Public comments on this document were extensive and covered a range of topics. As part of this public input, among many other comments, some people noted the demand for motorized recreation in the region and that the SPRA property might be a good fit for a variety of different motorized vehicles. Demand for a shooting range was also expressed.

In the next step of the planning process, the development of a draft property vision, goals, and conceptual alternatives, the Department included motorized uses and a shooting range as potential recreation opportunities in the Magazine Area in one of three alternatives (2013). In the public comments subsequently received on these alternatives, the incorporation of motorized uses and a shooting range was seen by many commenters as a deviation from the DNR’s original statements of its intent for the property (which had focused on managing the property to provide conservation outcomes and low-impact recreation), as well as the DNR’s application to the NPS to acquire the land for park purposes (again, for conservation and low-impact recreation). Further, many remarked that motorized activities at SPRA were inconsistent with the values and concepts agreed to by the Badger Reuse Committee, of which the DNR was a member (see below).

During the comment period for the draft vision, goals, and conceptual alternatives the potential inclusion of a shooting range and motorized uses at SPRA generated more public comments than all other issues combined. A large majority of comments received were opposed to the inclusion of either a shooting range or motorized uses at SPRA.

b. **Badger Oversight Management Commission (BOMC) and public participation in the development of the draft master plan.**

Public input and involvement in the master planning process is critical to the agency’s ability to craft well-reasoned, successful plans. The Department fully understands that the support of the general public is imperative for a property to meet its ecological and recreation potential.

To ensure that all citizens have opportunities to inform and guide the outcome, the Department follows a standard approach when developing master plans to ensure adequate public involvement at three critical times – after the release of the regional & property analysis, after the release of the draft master plan, and at the NRB meeting when the plan is considered.

In response to the high level of public interest in the future of SPRA, the Department has gone beyond the standard approach during the development of this master plan. Over the past several years, staff members have spent time soliciting public input in a variety of formats and have attended meetings and made presentations to convey the Department’s perspectives and positions. Representatives from the Department
have attended nearly every BOMC meeting over that last several years. The amount of staff time and effort focused on public participation in the development of this master plan exceeds other planning efforts in the Department’s recent history.

Developing master plans, particularly for high profile and popular properties, is often marked with controversies over competing recreation uses. And for newly acquired properties, where there is a “blank slate” of existing recreational uses, reaching agreements on future uses can be especially challenging. The Department concluded that, rather than engage in ongoing public discussions and negotiations throughout the development of the plan, the planning process would progress most efficiently if staff completed the draft master plan (based on the extensive comments received during the public input opportunities) and then gathered public input on the entirety of the document. Some members of the Badger Oversight Management Commission and the public expressed concern that this approach did not provide adequate opportunities for input during the plan development process.

c. Neotenic salamanders.

Concerns have been raised over the last several years regarding the fate of the approximately 1,200 Eastern Tiger Salamanders that live in the reservoirs. These salamanders are neotenic, meaning they live their entire lives and breed in a larval, tadpole-like condition, and never leave the water. Although a rare occurrence in this species, it has been recorded elsewhere, generally in waters that are permanent and do not have predator (fish) populations.

The reservoirs present significant public safety issues and need to be razed. The Department intends to drain the reservoirs, crack them so they won’t hold water in the future, and then fill them with material. Initially, the DNR proposed moving as many of the salamanders as possible to interested captive or research facilities (mostly schools, universities, museums and zoos) around the country and then releasing the remaining individuals into nearby ponds and wetlands. Unfortunately, the population of salamanders in the east reservoir has contracted a virus and potentially other diseases that are not known to occur in the local tiger salamander population. As such, these individuals cannot be released back into the wild.

The Department is currently in the process of identifying captive facilities interested in receiving animals. Individuals not transferred to captive facilities will be euthanized.

The decision to remove the reservoirs (and thus the salamanders) generated controversy. Some members of the public requested that the salamanders be maintained in the reservoirs as part of a unique opportunity to showcase one of the unintended consequences of the BAAP’s operations and as a means to educate the public about an unusual biological event. In June 2015 the Department received a petition with over 1,750 electronic signatures stating that the salamanders and the reservoirs should be saved. Alternatives related to the salamanders are described in Chapter V.

d. Adherence to the Badger Reuse Plan.

On several occasions concerns were raised by members of the public that the Department did not appear to adhere to the 2001 Badger Reuse Plan (BRP) and did not seek to align the development of the master plan to the values and criteria set out in that document. The Department was a signatory to the document and some members of the public felt that the Department had abandoned its earlier commitment to follow the BRP in developing the SPRA master plan.

During the development of the Badger Reuse Plan, many potential future uses were discussed ranging from industrial use to ecological restoration. Although the Reuse Committee reached consensus on the overall
CHAPTER IV: Analysis of the environmental impacts

concepts related to recreation (criterion 5.3), consensus was not reached concerning specific recreation activities. To be sure, at that time there was support and a strong preference for low-impact recreational use of the property as a whole; however, that was not the only recreational setting considered.

Throughout the planning process, representatives of the Department have stated on numerous occasions that the BRP was a crucial guiding influence in developing this master plan and was the foundation on which staff began their work. However, as with all Department planning processes, as staff evaluated options and alternatives they also took into account more recent information, changing conditions on the property, and ongoing public perspectives and input.

The Department also received many ideas and perspectives from the public during the first phase of the master planning process about recreation and conservation possibilities and needs. In particular, the Department received input to incorporate opportunities for ATVs and motorbikes, a shooting range, and other uses that went beyond what was included in the Badger Reuse Plan. As such, staff incorporated this input into the planning process.

e. Groundwater contamination.

Three plumes of contaminated groundwater are known to emanate from the BAAP. The Army is responsible for monitoring and addressing this contamination and has engaged in a number of treatments over the last several decades. The Department is responsible for overseeing and approving groundwater and surface water monitoring and treatment methods.

Local citizens have expressed concerns for many years about contamination associated with activities at the BAAP site and its impact on and off site. A local group, Citizens for Safe Water Around Badger (CSWAB), has been actively engaged with the Army questioning the cleanup of contamination and pressing the Army and the DNR to exceed established standards for environmental cleanups. CSWAB has routinely expressed concerns about the environmental contamination resulting from the BAAP operations as well as the DNR’s oversight of clean-up activities.

f. Health impacts to visitors and animals from residual contaminants.

Concerns have been raised that the health of visitors may be at risk through direct exposure to soils in some places. In addition, concerns have been raised that eating edible plants, berries, apples, mushrooms, and animals (game species as well as goats, cattle, and other grazers) from SPRA may also lead to adverse health impacts.

2. ISSUES OF PUBLIC CONCERN AND CONTROVERSY THAT WERE RAISED AFTER THE RELEASE OF THIS DRAFT MASTER PLAN.

To be completed after the public review period.
Figure 17: View looking east of the main entrance gate. The Baraboo Hills are on the left and the Rocket Area is seen on the right. Much of the land in the central part of the photo is now owned by the Ho-Chunk Nation.
CHAPTER V: ALTERNATIVES and their ENVIRONMENTAL IMPACTS

A. Introduction

Throughout the process of developing this draft master plan, many alternatives and options to meet the property vision and goals were evaluated. There are, of course, numerous small-scale variations to the proposed draft master plan that were examined. For example, different configurations of where to manage for grasslands and oak openings in the Magazine Area or which of the former roads to convert to biking and equestrian trails in the Northeast Moraine. This chapter briefly describes the more substantive alternatives that were considered when developing the draft master plan, their potential impacts, and the reasons they were not incorporated into the draft master plan.

The master plan lays out the Department’s plan for managing the property over the next 15 years. Some ideas were evaluated but were not included in the plan because the Department does not have the staff or resources to pursue them at the present time. These options might be appropriate for the property later and are described here with the thought that they might be helpful as an initial list of options to consider in future updates to the plan.

B. The “no action” alternative

Alternative: Given the unique history and condition of the property, if the property is to reach the recreation and conservation potential described in the proposed master plan there is a very large amount of work ahead for the Department. An alternative to the proposed plan is for the Department to simply let SPRA remain “as is” or to undertake just a minimal amount of management work to address any safety issues that emerge. In this alternative, the Department would not invest in habitat management actions to restore and enhance habitats nor would it build and maintain facilities to accommodate visitors.

Potential Impacts: Taking no management actions at SPRA would likely result in several undesirable outcomes. Most obviously from a habitat perspective, the invasive plants (particularly shrubs) that are proliferating through the property would most probably spread throughout the property at increasing densities. This would further degrade the ecological quality of the property and prevent the development of a grassland to forest continuum. In the absence of management, over decades some parts dominated by shrubs may succeed to forests and the property would no longer provide important grassland habitat for birds. Without management, much of the property would become impenetrable thickets of brush.

From a recreation standpoint, SPRA could be “managed” without any facilities or developments. The Department could simply construct a limited number of parking lots around the exterior and require visitors to walk (or possibly bicycle or ride horses) into the property on the former roads, which would presumably slowly deteriorate over time. Without adequate habitat management, the quality of hunting experiences would be greatly diminished.

If the Department doesn’t develop and maintain roads, trails, interpretive displays, and other facilities, providing interpretation of the site and educating visitors about the property’s unique human and natural history would be very difficult.

Taking a hands-off approach to management would cost far less than the proposed plan, but would also likely result in very little visitation and economic benefit to the area.

Decision: To meet the property’s potential and to achieve the goals for which the property was acquired, the Department concluded that the “no-action” alternative was unacceptable.
C. Property and administrative alternatives

1. DIFFERENT VEHICLE ACCESS POINTS

   **Alternative:** Given the configuration of ownership parcels, vehicle access to the property could be via USH 12, STH 78, Keller Road, or at the end of Halweg Road. The Department evaluated options other than the main entrance on USH 12 for a single entry point, as well as the potential to have two or more access points.

   **Potential Impacts:** Having a single entry point in a different location than the main entry gate at USH 12 would likely result in some decrease in visitation. The Department expects some people travelling on USH 12 (possibly on their way to Devil’s Lake State Park, the Wisconsin Dells, the International Crane Foundation, the Ho-Chunk casino, or other nearby attractions) to be drawn into visiting SPRA. If there is no entry on USH 12, it is likely many of these potential visitors may continue travelling without stopping at SPRA.

   Providing vehicle access at Keller Road, Halweg Road and at some sites along STH 78 could generate a significant and undesirable increase in local traffic patterns.

   Incorporating multiple access points into the property may reduce traffic at any specific entry point, but would complicate DNR staff’s ability to monitor and control property use. Multiple entry points would also set up the potential for people to use the property as a short-cut connection between USH 12 and STH 78, which could interfere with visitors’ enjoyment of the property.

   **Decision:** To improve the efficiency of managing the property and to minimize disruptions to neighboring landowners, the Department concluded that one access point, at the main entry gate on USH 12, provided the best solution for vehicle access.

2. PROPERTY BOUNDARY MODIFICATION

   **Alternative:** The NRB established the SPRA project boundary in 2002 and included the entire BAAP perimeter plus a small area connecting the property to Lake Wisconsin at Weigand’s Bay. This boundary includes the lands owned by the following partners: Ho-Chunk Nation (1,553 acres), USDA-DFRC (2,105 acres), Bluffview Sanitary District (164 acres), DOT (60 acres) and Town of Sumpter (3.6 acres). In addition, there are about 80 acres of privately-owned lands within the boundary.

   This master plan proposes to remove the Ho-Chunk Nation lands from the SPRA project boundary. As noted in the Introduction, when the initial project boundary was established it was unclear which lands would be transferred to the Ho-Chunk Nation and which might come to the Department. This issue has now been resolved and in recognition that the Ho-Chunk Nation is a sovereign nation the Department is proposing to remove their 1,553 acres from the SPRA project boundary.

   The DNR does not seek to own any of the other lands within the boundary and staff evaluated the option of further reducing the project boundary to correspond with the intended DNR ownership being transferred from the GSA/NPS (3,385 acres).

   **Potential Impacts:** Reducing the project boundary to correspond with the intended DNR ownership would remove any misinterpretation that may exist that the DNR seeks to acquire lands from the partners. Although at some point in the future the DNR may wish to establish a trail to connect the Weigand’s Bay parcel with the main part of the SPRA property, it does not propose a connection now. Removing the privately-owned lands would also make this apparent.

   However, at some point in the future, the DNR may seek to exchange or trade lands with partners inside the proposed project boundary. Or, similarly, if a landowner inside the boundary no longer wishes to own
or manage some of their property, the DNR may want to take on the ownership or management responsibilities of these lands. And if there is a demand for a connection to Weigand’s Bay, the DNR may wish to pursue acquiring a narrow strip of land to the main part of SPRA. Modifying the existing boundary as part of this master plan could potentially require making another modification later.

The existing ownership arrangement was agreed to by the Badger Intergovernmental Group\textsuperscript{33} and reflects the DNR’s and its partners’ desire to work together on issues of joint management interest and concern. Further, the public was informed in 2002 of this boundary, and little has changed in terms of ownership issues (other than the Ho-Chunk Nation receiving their land) to necessarily trigger a further boundary change. Finally, it may be premature to modify the boundary before the DNR has a better understanding of operation and management issues that may emerge in the future.

**Decision:** The Department concluded that it was most appropriate to propose to remove the Ho-Chunk Nation land from the project boundary but to retain the remainder of the boundary for now.

3. **LONG TERM USE AND MAINTENANCE OF BUILDING 207**

**Alternative:** Building 207, near the main entrance gate, is neither a particularly notable example of BAAP construction nor in good condition. Yet, it is one of the few buildings remaining from the plant complex and as such is one of the last links to the BAAP and could be part of “telling the story” of the property. The Department evaluated options for maintaining the building for long-term use by staff, as a visitor center, or for the Badger History Group.

**Potential Impacts:** The cost of addressing the near-term repairs needed to prevent further deterioration of the building and to bring the building into ADA compliance is estimated to total approximately $100,000. The cost to restore the building and bring it to an acceptable standard for long-term use by staff or the public is far greater and exceeds currently available funds.

The Department consulted with the Badger History Group about their potential long-term use of Building 207. The group does not have the fiscal resources to take on repair and maintenance costs to upgrade the building for long-term use. Both the DNR and BHG reached concurrence that the building does not meet either party’s long-term needs and it was appropriate to look to other solutions.

**Decision:** The Department concluded that it is appropriate to make necessary repairs to Building 207 as described on page 86, to ensure short-term use but that the structure should ultimately be removed.

4. **LAND MANAGEMENT CLASSIFICATIONS**

**Alternative:** Four of seven land management classifications are proposed at SPRA. SPRA could be classified entirely as a recreation management area, entirely as a habitat management area, or could have more or less native community management area. Or, a different combination of recreation management area, habitat management area, special management area, and native community management area could be implemented than what is proposed. Alternatively, other land management classifications (forest production area, scenic resources management area, wild resources management area) could be assigned, although these classifications do not appear to be appropriate fits for the property.

\textsuperscript{33} The BIG included representatives from: GSA, Army, DFRC, Ho-Chunk Nation, Governor’s Office, DNR, DOA, Sauk County, and the Towns of Sumpter and Merrimac.
**CHAPTER V: Alternatives and their environmental impacts**

**Potential Impacts:** As stated earlier, many recreation and habitat outcomes are authorized and possible under all land management classifications. From a practical standpoint, what is far more relevant than the land management classification is the suite of recreation facilities and habitat management actions that are proposed in the master plan. That is, since a variety of habitat and recreation outcomes are possible under land management classifications, the title of the classification is less critical than the content of the actions proposed.

**Decision:** Although the Department considered classifying the entire property either recreation management area or a habitat management area, in the end it concluded that a combination of classifications was most appropriate. The Department strongly emphasizes that restoring and managing high quality grassland and savanna habitats throughout SPRA and the development and operation of recreation facilities to provide high quality recreation experiences throughout SPRA are concurrent and compatible goals.

5. **WISCONSIN ARMY NATIONAL GUARD USE OF THE SAND AND GRAVEL BORROW PIT**

**Alternative:** The Wisconsin Army National Guard has a variety of training needs, including practicing take-offs and landings in sandy, dusty conditions. The Department, in consultation with the Guard, considered allowing the Guard to use of the sand and gravel borrow pit as a training site and to close the site to public access.

**Potential Impacts:** Use of the site as a helicopter training site could affect visitors to this portion of the property. The take-offs and landings would generate considerable dust that would affect air quality in the immediate area. The noise generated would also be significant. The Guard would need to take appropriate steps to ensure that visitors to SPRA were kept at a safe distance during take offs and landings.

Some visitors may find the training exercises an interesting event to watch and these events would add to their satisfaction with their trip to SPRA. Other visitors may have an adverse reaction to the training exercises. In particular, horseback riders in the vicinity of the training site may be at risk to horses being spooked by the helicopters.

**Decision:** The Guard evaluated the sand and gravel borrow pit and concluded that the site had some benefits as a training site but that, at the present time, the Guard would not pursue use of the area. If the Guard decides in the future it would like to use the borrow pit for training, the Department will work with the Guard to determine if, and how, use of the site could be compatible with the primary purposes of the property.

The 25-acre sand and gravel borrow pit will be classified as a special management use area in this master plan to reflect that the Department may excavate sand and gravel from the site for use on the property (e.g., to fill the reservoirs or the lower level of the former pump house). If the Guard uses the site for training in the future this would be consistent with the site’s classification as a special management use area.

6. **ADDITIONAL VEHICLE ACCESS DURING THE NINE-DAY DEER GUN SEASON**

**Alternative:** The Department considered opening the service road running along the southern boundary of the Rocket Area to vehicles during the nine-day deer gun season to make it easier for hunters to retrieve deer.

**Potential Impacts:** Temporarily opening these routes would result in all areas of SPRA being within about a 600 yard (3/8th of a mile) walk of a vehicle.
Temporarily opening the service road and trail to cars and trucks could impact other visitors who wish to hunt in more remote settings. It may also impact other visitors to SPRA that are using the trail for hiking, biking or horseback riding. Adjusting the management of the property to accommodate a particular user group (in this case deer hunters) could also result in other user groups requesting similar treatment.

**Decision:** At over 3,400 acres SPRA is a relatively large property for southern Wisconsin. However, its configuration combined with the proposed road network results in the most remote part of the property being slightly less than three-quarters of a mile from the nearest road. This distance is in line with other large DNR properties in the southern part of the state. The Department concluded there were not adequate benefits or justifications to temporarily providing more vehicle access to the property during the nine-day deer gun season.

7. **MAINTAIN THE EAST RESERVOIR**

**Alternative:** The Department considered leaving the east reservoir in its current condition (and the six foot chain link fence encircling the reservoir) and leaving the neotenic salamanders in place.

**Potential Impacts:** Leaving the east reservoir would provide visitors with access inside the chain link fence with the opportunity to potentially see the neotenic salamanders as well as for all visitors to see a remaining piece of infrastructure from the days of the BAAP operation. This would likely add to many visitors’ overall experiences and levels of satisfaction with their trip. Leaving the east reservoir would also maintain the population of neotenic salamanders, as well as other life forms in the water.

However, it is unknown how long the reservoir will continue to hold water. The west reservoir has apparently developed cracks that limit its depth to about three feet; it is likely that the east reservoir will also develop cracks over time.

The reservoir has steep-sloped sides that, should someone accidently fall in, are very difficult to scale. As a consequence, it poses a significant drowning hazard. The Department could attach ladders along the sides, position life rings around, and install other safety devices. These improvements would likely require only a modest investment. More importantly, the Department does not have the resources to monitor and prevent visitors from inadvertently or intentionally harming the population of neotenic salamanders. The overlook site here is likely to be the most popular spot at the property and it is probable that the reservoir would also end up collecting a substantial amount of trash over time. Maintaining the east reservoir would also limit the Department’s ability to restore the site and convert it to a focal point for visitors.

**Decision:** The Department supports efforts to maintain neotenic salamanders for research and educational purposes and has funded research on issues related to transporting the animals, metamorphosis, and husbandry. However, the Department believes the reservoirs are not an effective or appropriate place to maintain these animals. As a result, after all the institutions have received the desired number of neotones and funding is available, the Department proposes to drain the reservoirs, crack the bottoms, fill them with material and then develop and restore the site as a day use area with an overlook, picnic area, amphitheater, and parking lot.
D. Recreational use and opportunity alternatives

1. DOG TRAINING AND TRIALING

**Alternative:** The Department received requests to consider incorporating a Class 1 dog training and/or dog trialing area at SPRA. The Department also considered prohibiting all other recreational uses in a Class 1 or 2 site (which can be done at state recreation areas, but not state wildlife areas).

**Potential Impacts:** Class 1 training and trialing sites are open all year to anyone holding a dog training/trialing license. Releasing captive animals and shooting are authorized year-round. Two of the five designated Class 1 training and trialing sites in the state are within 15 miles of SPRA (Pine Island Wildlife Area and the Mazomanie Unit of the Lower Wisconsin Riverway). Class 1 training and trialing grounds are typically hundreds of acres in size.

Previously, there had been a bigger difference in the operation and function between Class 1 and Class 2 dog training grounds. Now, through a streamlining effort by the Department, there is less distinction between these sites. Under the new system, anyone holding a dog training license can access any Class 2 dog training ground (license holders no longer need to seek approval to use individual sites). The Department is also undertaking an effort to expand the number of Class 2 training grounds throughout the state.

**Decision:** Dog trialing events can occur at SPRA under a special event permit. The master plan proposes that the Magazine Area be used to host a limited number of special events and the area appears well-suited to host a dog trialing event. The establishment of the proposed 72-acre Class 2 site will accommodate dog training all year and will function very much like a Class 1 training site. The area will be located at the southern end of the property with the expectation that this will help reduce conflicts with other visitors. Thus, the Department concluded that a designated Class 1 dog training or trialing ground was not warranted at SPRA since the goals of providing dog training and trialing will be accomplished by the proposed master plan.

2. LARGER AND MORE ELABORATE VISITOR CENTER

**Alternative:** The Badger History Group has many more items and documents related to the construction and operation of the BAAP than can be displayed in the current museum space in Building 207. The BHG would like to display its materials in a larger space than is being planned in the proposed visitor center.

**Potential Impacts:** A significantly larger visitor and interpretive center, while potentially attracting a larger number of visitors, would require significantly more funding. A larger center and associated visitation could also lead to increased impacts to habitats and species.

**Decision:** State funding for a visitor center, regardless of size, is likely to be limited for several years and any new facility would also compete against other capital development projects throughout the state. The Department is likely to prioritize a visitor center at Devil’s Lake State Park (in collaboration with the National and State Ice Age Trail) ahead of a facility at SPRA.

The Department believes a modest visitor center would compete favorably for state funds, but will likely take 8 to 10 years to work though the capital development process. If private funds for a more elaborate visitor center at SPRA can be collected to supplement state funds, the Department could evaluate how to best leverage these funds.
3. DEDICATED MOTORIZED RECREATION AREA

Alternative: The Department evaluated the possibility of designating part of SPRA as a motorized recreation area for ATV, UTV, motorcycle, and/or four-wheel drive truck use. In addition, the Department evaluated combining a designated motorized recreation area with a longer motorized use trail, generally around the perimeter of SPRA.

Potential Impacts: Including a motorized recreation area at SPRA would likely generate considerable use and potentially increase overall visitation to the property. This could increase the economic impact of the property.

The increased noise and dust associated with motorized use could adversely affect other visitors to the property, as well as impact nearby residents. The Department listed motorized activities as a potential use in the Magazine Area in one of the three conceptual alternatives presented to the public in 2013. The public was overwhelmingly in opposition to including an area for motorized use at SPRA.

The use of part of SPRA for a motorized recreation area would also impact wildlife in the immediate and surrounding area. The noise and dust generated could result in displacement of desired species, including rare and declining grassland birds.

Decision: The Department recognizes there is significant demand for motorized recreation opportunities in southern Wisconsin. While SPRA meets some of the NRB-approved criteria for locating a motorized recreation area, in addition to the site’s ecological values, there was strong local opposition to siting a MRA here during the most recent public comment period. Opposition was also voiced from the Department’s primary neighbors here, the Ho-Chunk Nation and the Dairy Forage Research Center.

The Department concluded that SPRA is not well suited to host a concentrated motorized recreation area but rather could host a limited number of special events for motorized recreation with minimal impact. In evaluating demand for different types of motorized recreation and existing opportunities throughout the region and state, the Department concluded that an acceptable use of SPRA would be to allow dual-sport motorcycles up to six days a year on roads and biking and horseback riding trails.

4. ESTABLISH A YEAR-ROUND OFF-LEASH DOG PARK

Alternative: The Department considered the possibility of designating an area for visitors to have their dogs off-leash year-round. Two areas were considered: (1) about 50 acres in the northeast part of the Magazine Area, and (2) a portion of the Southern Link unit east of STH 78.

Potential Impacts: In state parks, dogs are required to be on a leash not more than eight feet long at all times. On most other state properties, dogs are allowed off-leash except for the period from April 15 to July 31 (to protect ground nesting animals).

Allowing dogs to be off-leash year-round in an area would displace many mammals and birds from the area and could significantly reduce the reproductive success of animals that nest on or near the ground in the site.

The Department, and in particular the Parks & Recreation program, receives many requests throughout the year from people looking for places to have their dogs off-leash. A common request from visitors to Devil’s Lake State Park is for a place their dogs to run off-leash. The closest public dog park is in the City of Baraboo. It is likely that a designated area in SPRA for dogs to be off-leash year-round would be very popular and heavily used.
Although many dog parks in cities are fenced, not all are. Unfenced dog parks can have issues with dogs and their owners leaving the designated boundaries. Fencing can be expensive, especially for a larger park. In addition, staff costs to monitor and address issues at dog parks can be sizeable.

**Decision:** The Department concluded that although there is likely adequate demand to justify a dog park in SPRA, establishing one is not feasible because financial and staff resources are not currently available. As such, the Department dropped consideration of designating a dog park at the property.

**E. Habitat, species and land management alternatives**

**1. DESIGNATION OF STATE NATURAL AREAS AT SPRA**

**Alternative:** Two areas in SPRA were identified as Primary Sites in the Rapid Ecological Assessment. The information in the REA is meant to be considered along with other information when identifying opportunities for various management designations during the master planning process. The Primary Sites in SPRA were delineated because they generally encompass the best examples of: (1) rare or representative natural communities, (2) documented occurrences of rare species populations, and/or (3) opportunities for ecological restoration or connections. These sites warrant strong consideration during the development of the property master plan for protection or restoration. In some cases, areas identified as Primary Sites that are not already State Natural Areas are designated as SNAs in the master planning process.

The REA also identified two areas as high priority grassland areas and one area as a high priority shrubland area. A sizeable portion of one of the high priority grassland blocks occurs on land that is being transferred from the Army/GSA to the Ho-Chunk Nation. These high-priority areas were identified because they currently provide high quality surrogate habitats that support diverse and large populations of grassland and shrubland birds. In terms of habitat quality, these areas do not rise to the level of being a Primary Site because they are ecologically degraded or in some cases planted. However, these sites do offer significant management and restoration opportunities for maintaining and enhancing viable populations of grassland and shrubland birds.

**Potential Impacts:** The SNA program follows well established criteria in determining whether sites should be designated or dedicated as State Natural Areas. In evaluating SPRA, staff from the SNA program concluded that neither the Primary Sites nor the high priority grassland and shrubland areas met the criteria for inclusion into the SNA program. Thus, staff did not include a proposal to designate these parcels as State Natural Areas as part of this master plan.

Not following the criteria for SPRA would set a precedent of including areas in the SNA program that do not meet established ecological values. The Department believes that this would de-value future SNA designations and the SNA program as a whole.

**Decision:** The Department concluded that it was most appropriate not to designate any areas within SPRA as State Natural Areas. The highest quality portion of the Prairie and Savanna Primary Site (the portion that includes the Hillside Prairie) is proposed to be classified as a native community management area.

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2. MAINTAINING MORE LAND IN FOREST COVER

Alternative: The proposed management plan calls for much of the early to mid-succession forest that has grown up since the BAAP was established in 1942 to be harvested (with oaks and some other savanna tree species such as hickory to remain) and converted to oak opening habitat. In addition, the forest along the south bluff of the Baraboo Hills is proposed to be thinned to convert it to an oak woodland habitat over time. Both the proposed oak woodland and oak opening habitats are what occurred on these areas prior to Euro-American settlement. An alternative considered was to manage these areas, or portions of them, as forest blocks following conventional forest management practices.

Similarly, the existing conifer plantations are proposed to be removed, some before they reach full maturity. An alternative considered was to maintain all the plantations to full stocking capacity.

Potential Impacts: Managing blocks of the property as forest is feasible, but inconsistent with the DNR's goal for the property and would not take advantage of the unique opportunity here to manage a large block of land for an ecological transition. Further, managing blocks of the property for forest resources would miss the opportunity to manage for a native community type, oak opening, that is among the rarest in the state and country.

Decision: The Department concluded that it was most appropriate to manage SPRA for the community types native to the property and to take advantage of the unique opportunity here to manage a transition of habitat types from forest (in DLSP) to oak woodland to oak opening to grassland.

3. ESTABLISHING A BISON HERD

Alternative: There is a desire to return much of the SPRA property to the conditions and ecological processes that existed before Euro-American settlement. As such, consideration was given to including a resident bison herd on SPRA.

Potential Impacts: Incorporating bison on the property would likely be a draw for visitors and would provide a unique opportunity on public property in Wisconsin to showcase and educate the public about bison and their impact on natural and human history. Bison herds on private and public conservation lands elsewhere in the Midwest are popular attractions, serve important management roles, and can provide some economic return. As large grazers, bison can also play a key role in habitat management.

Depending on the number of bison and where they were located on the property, their presence could restrict or alter recreational use. One potential option would be to confine a herd to a portion of SPRA (enclosed by a substantial fence) and only provide vehicle access to the area (i.e., visitors would have to stay within their car or truck as they drove through) or provide viewing opportunities around the perimeter of the area (for example a viewing tower outside the fence). A second option would be to fence a larger area and allow visitors to walk, bike, horseback ride, cross country ski and snowshoe on trails through the area. This would be potentially feasible if the herd size and the visitor numbers were small enough to reasonably avoid public safety issues. Hunting deer, turkeys, and other game species could potentially be compatible with the second approach but would likely not be compatible with the first.

The areas where bison were located would need to have adequate fencing, which is typically 6-8' in height and designed for strength, as well as access to water and appropriate loading facilities.

Decision: The Department concluded that bison may be appropriate to incorporate into the use and management of the property later, but the funds required to build and maintain the facilities that would be needed are not currently available. Further, the Department wishes to evaluate visitor use patterns before
making decisions that would significantly affect the recreational opportunities at the property. Also, it may be most appropriate to evaluate options to manage a bison herd on the property in partnership with the DFRC and the HCN. As such, the Department will defer decisions regarding establishing a bison herd until the pattern of recreational use and partner interest is better understood.

4. PERMANENTLY CONVERTING LAND TO ROW CROPS

Alternative: The soil in several portions of SPRA has not been significantly altered. If the brush and early successional trees that currently grow on many of these areas were cleared, these sites could likely support row cropping and other forms of active agriculture.

Potential Impacts: Permanently converting portions of SPRA to conventional row crops such as corn and soybeans or other farming practices could provide some ongoing income to the Department, which it could use to fund habitat restoration and management of other lands. However, cropland does not provide the habitat benefits of restored grassland and oak openings and would restrict recreational use during the growing season. As such, permanent cropland is not consistent with the intent or purpose of the SPRA property.

A benefit of row cropping is that, when different crops are grown over a series of years, weed species are dramatically reduced. This can significantly improve the success of grassland restorations when native grasses and forbs are planted.

Decision: As described in Chapter II, the Department will temporarily convert lands with appropriate soils to row crops as a means to reduce weed growth and prepare soils for replanting to native species, but will not convert land to permanent row crop use.

5. MANAGEMENT OF NEOTENIC SALAMANDER POPULATION

Alternatives: The Department evaluated options for the future of the neotenic salamanders in the reservoirs. One option would be to simply leave the salamanders in the reservoir until the structure developed cracks, leaks, or for other reasons no longer held water. Another alternative, which the Department initially planned to follow, would be to release the salamanders into various ponds and wetlands in the local area.

Potential Impacts: As noted in the above discussion related to maintaining the east reservoir (page 133), the structure presents a serious safety and long-term management issue and there are not practical alternatives to maintaining either of the reservoirs.

The plan to release the salamanders back into the local population was removed from consideration when a health analysis determined the animals in the east reservoir harbored diseases not known to occur in the local population. If subsequent studies indicate that the diseases present in the salamander population in the east reservoir are also present in the local wild population, then the animals in the reservoirs may be released locally.

Decision: As described on page 40, the Department recognizes the research and educational value of these salamanders. The Department is identifying institutions (e.g., museums, aquaria, zoos, schools, and research organizations) that are interested in receiving neotenic salamanders for research, education, or display purposes. Potentially beginning in 2015 or 2016, the Department plans to capture and distribute the requested number of salamanders to these institutions.
CHAPTER VI: SUMMARY of the PUBLIC INVOLVEMENT PROCESS in DEVELOPING the MASTER PLAN

Although the public has been actively engaged for well over a decade in helping determine the future plans for the BAAP property as a whole and SPRA in particular, this summary of public involvement pertains to the actual development of the master plan and as such captures the time period from January, 2012 to now. The Department recognizes and is grateful for the ongoing and the extensive effort the public and their elected officials have invested to move SPRA from being part of the largest propellant plant in the country to what the Department hopes becomes a unique, popular and significant destination for visitors.

The Department sought public input at several stages in the planning process. In July, 2012 the DNR hosted an initial public open house at UW-Baraboo/Sauk County to kick-off the master planning effort and present the draft Regional & Property Analysis. One hundred twenty people signed in at the open house and a total of 388 comments were received via the comment form, emails, letters, and voice messages. In July, 2013 the Department hosted an open house meeting in Prairie du Sac to present the draft vision, goals, and conceptual alternatives. Over 250 people attended and thousands of comments were received. The Department posted all comments received during both public comment periods as well as summaries of the input received on the DNR website.

The Department maintained a list of over 1,700 people interested in receiving updates about the property and the planning process. Periodic emails were sent to this distribution list. In addition, documents related to different aspects of the planning process were posted on the DNR website.

The commissioners and stakeholders that form the Badger Oversight and Management Commission (BOMC) maintained an active interest in the development of the master plan. The Department provided updates to the BOMC at their regular meetings regarding issues related to the management of the property and the master planning process.

Summary of comments received on this draft master plan.

*To be developed after the public review period.*
Figure 18: Above, the Fred & Cora Steuber farm where East Rocket was built. Below, the Immanuel Evangelical Church (Thoelke) located in the Magazine Area north of the Thoelke Cemetery.
Appendices

Appendix 1: Reference list.

The following documents relate to the past, present, and future of the Badger Army Ammunition Plant and may be of interest for those seeking more information about the property and the surrounding area.


Badger Reuse Committee. 2000. *Natural, Historical and Cultural Resources at the Badger Army Ammunition Plant, Sauk County, Wisconsin*. A report to the BAAP Reuse Committee by the Historical Resources Subcommittee and the Badger History Group. 20 October 2000.


Derleth, August. 1948. *Sauk County, a centennial history*. Sauk County Centennial Committee. Baraboo, WI.


Appendix 2: Estimated costs of proposed facilities.

Roads and trail estimated costs:

<table>
<thead>
<tr>
<th>Roads (miles)</th>
<th>Total Miles</th>
<th>Cost per mile</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt (moderately developed)</td>
<td>14.6</td>
<td>$80,000</td>
<td>$1,168,000</td>
</tr>
<tr>
<td>Gravel (lightly, moderately developed)</td>
<td>7.3</td>
<td>$35,000</td>
<td>$255,500</td>
</tr>
<tr>
<td><strong>Total Roads</strong></td>
<td><strong>21.9</strong></td>
<td></td>
<td><strong>$1,423,500</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trails (miles)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hiking, longer distance trail</td>
<td>5</td>
<td>$19,000</td>
<td>$95,000</td>
</tr>
<tr>
<td>(primitive)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hiking, short loop trails</td>
<td>5</td>
<td>$19,000</td>
<td>$95,000</td>
</tr>
<tr>
<td>(primitive to moderately developed)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biking (moderately developed)</td>
<td>15</td>
<td>$22,000</td>
<td>$330,000</td>
</tr>
<tr>
<td>Mt. Biking, single track</td>
<td>5</td>
<td>$19,000</td>
<td>$95,000</td>
</tr>
<tr>
<td>(primitive)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equestrian (lightly developed)</td>
<td>12</td>
<td>$25,000</td>
<td>$300,000</td>
</tr>
<tr>
<td>Snowmobile (if not on GST)</td>
<td>6</td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>Great Sauk Trail</td>
<td>5.5</td>
<td>$29,000</td>
<td>$159,500</td>
</tr>
<tr>
<td><strong>Total Trails</strong></td>
<td><strong>48</strong></td>
<td></td>
<td><strong>$1,074,500</strong></td>
</tr>
</tbody>
</table>

**TOTAL** $2,498,000
Proposed recreation facilities estimated costs:

<table>
<thead>
<tr>
<th>Facility</th>
<th>Location</th>
<th>Number of units</th>
<th>Unit Cost</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitor center</td>
<td>to be determined</td>
<td>1</td>
<td>$575,000</td>
<td>$575,000</td>
</tr>
<tr>
<td>Entrance sign</td>
<td>Gateway Corridor</td>
<td>1</td>
<td>$8,500</td>
<td>$8,500</td>
</tr>
<tr>
<td>Interpretive signs</td>
<td>Property-wide</td>
<td>15</td>
<td>$1,000</td>
<td>$15,000</td>
</tr>
<tr>
<td>Viewing deck</td>
<td>Bluff Vista</td>
<td>1</td>
<td>$45,000</td>
<td>$45,000</td>
</tr>
<tr>
<td>Amphitheater</td>
<td>Bluff Vista</td>
<td>1</td>
<td>$150,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>Razing the reservoirs</td>
<td>Bluff Vista</td>
<td>1</td>
<td>$2,300,000</td>
<td>$2,300,000</td>
</tr>
<tr>
<td>Corral, hitching posts</td>
<td>NE moraine horse DUA</td>
<td>1</td>
<td>$8,000</td>
<td>$8,000</td>
</tr>
<tr>
<td>Vault toilets</td>
<td>Reservoir DUA</td>
<td>5</td>
<td>$65,000</td>
<td>$325,000</td>
</tr>
<tr>
<td></td>
<td>NE moraine horse DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lake WI overlook DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Magazine area special events DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weigand’s Bay DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Picnic tables, grills</td>
<td>Reservoir DUA</td>
<td>5</td>
<td>$2,500</td>
<td>$12,500</td>
</tr>
<tr>
<td></td>
<td>NE moraine horse DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lake WI overlook DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Magazine area special events DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weigand’s Bay DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fishing platform/pier*</td>
<td>Weigand’s Bay</td>
<td>1</td>
<td>$606,000</td>
<td>$606,000</td>
</tr>
<tr>
<td>Gates</td>
<td>Property-wide</td>
<td>15</td>
<td>$1,500</td>
<td>$22,500</td>
</tr>
<tr>
<td>Shop /maintenance building</td>
<td>Gateway Corridor</td>
<td>1</td>
<td>$200,000</td>
<td>$200,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parking lots</th>
<th>Location</th>
<th>Number of units</th>
<th>Unit Cost</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 car (paved)</td>
<td>Entrance lot (Bldg 207)</td>
<td>2</td>
<td>$18,000</td>
<td>$32,000</td>
</tr>
<tr>
<td></td>
<td>Weigand’s Bay DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 car (gravel)</td>
<td>NE moraine horse DUA</td>
<td>1</td>
<td>$8,000</td>
<td>$8,000</td>
</tr>
<tr>
<td></td>
<td>Rocketry site DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lake WI overlook DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hillside prairie</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thoelke cemetery</td>
<td>5</td>
<td>$7,000</td>
<td>$35,000</td>
</tr>
<tr>
<td>10 horse trailer &amp; 6 car (gravel)</td>
<td>NE moraine horse DUA</td>
<td>1</td>
<td>$8,000</td>
<td>$8,000</td>
</tr>
<tr>
<td>15 car (gravel)</td>
<td>Weigand’s Bay DUA (overflow)</td>
<td>1</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>20 car (paved)</td>
<td>Visitor center</td>
<td>1</td>
<td>$40,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>50 car (paved)</td>
<td>Reservoir DUA</td>
<td>1</td>
<td>$85,000</td>
<td>$85,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shelters</th>
<th>Location</th>
<th>Number of units</th>
<th>Unit Cost</th>
<th>Est. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>20’x30’</td>
<td>Reservoir DUA</td>
<td>1</td>
<td>$45,000</td>
<td>$45,000</td>
</tr>
<tr>
<td>20’x20’</td>
<td>NE moraine horse DUA</td>
<td>2</td>
<td>$35,000</td>
<td>$70,000</td>
</tr>
<tr>
<td></td>
<td>Magazine area special events DUA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16’x16’</td>
<td>Lake WI overlook DUA</td>
<td>1</td>
<td>$25,000</td>
<td>$25,000</td>
</tr>
</tbody>
</table>

**TOTAL**                  |                                 |                 |           | **$4,619,500** |

DUA = Designated Use Area

*The estimated cost for the fishing platform/pier includes addressing the underwater portion of the former pump house and removing the upper structures.
Appendix 3: Record of Decision.

To be completed following the public input period.