

**Feasibility Study and Environmental Assessment:**

**Proposed Paradise Valley Addition,  
Kettle Moraine State Forest – Southern Unit  
Waukesha County**

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# TABLE OF CONTENTS

<b>INTRODUCTION: FEASIBILITY STUDY AND ENVIRONMENTAL ASSESSMENT PROCESS</b>	<b>1</b>
<b>EXECUTIVE SUMMARY</b> .....	<b>2</b>
<b>PROPOSED PROJECT</b> .....	<b>3</b>
PROJECT DESCRIPTION .....	3
PROJECT GOALS .....	4
PROPERTY DESIGNATION .....	5
NEED .....	5
<i>Habitat Protection</i> .....	6
<i>Ecological Connectivity</i> .....	7
<i>Recreational Opportunities</i> .....	8
MANAGEMENT GOALS .....	8
<b>ENVIRONMENTAL DESCRIPTION</b> .....	<b>11</b>
PROPERTY PERSPECTIVE .....	11
<i>Physical</i> .....	11
<i>Biological</i> .....	12
<i>Cultural</i> .....	14
REGIONAL PERSPECTIVE .....	14
<i>Ecological Landscapes</i> .....	14
<i>Land Use and Trends</i> .....	15
<i>Existing Recreation Opportunities</i> .....	16
<b>PROPOSED COSTS</b> .....	<b>17</b>
BOUNDARY EXPANSION COSTS .....	17
STAFFING AND OPERATION COSTS .....	17
FUNDING SOURCES .....	18
<b>PUBLIC INVOLVEMENT</b> .....	<b>19</b>
<b>EVALUATION OF PROJECT SIGNIFICANCE</b> .....	<b>21</b>
ENVIRONMENTAL EFFECTS AND THEIR SIGNIFICANCE .....	21
SIGNIFICANCE OF CUMULATIVE EFFECTS .....	22
SIGNIFICANCE OF RISK .....	22
SIGNIFICANCE OF PRECEDENT .....	22
SIGNIFICANCE OF CONTROVERSY .....	22
<b>ALTERNATIVES</b> .....	<b>23</b>
NO ACTION .....	23
OPTION 1 .....	23
OPTION 2 .....	23
OPTION 3 – PREFERRED ALTERNATIVE.....	23
<b>PROJECT FEASIBILITY DETERMINATION</b> .....	<b>23</b>
<b>SELECTED BIBLIOGRAPHY</b> .....	<b>24</b>
<b>APPENDIX</b> .....	<b>26</b>

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## **INTRODUCTION: FEASIBILITY STUDY AND ENVIRONMENTAL ASSESSMENT PROCESS**

This is a combined Feasibility Study and Environmental Assessment (EA) that includes the required information for both types of studies, to avoid unnecessary duplication. Both the Feasibility Study and the EA function to provide the public and decision-makers with a factual, unbiased analysis of a proposal, and must identify reasonable alternatives in order to help make an informed decision.

A Feasibility Study is used to determine whether it is feasible for the Department of Natural Resources to establish, acquire, develop, and manage new property. The study takes into account the physical and biological environment and its capabilities, the views of the public and of landowners adjoining the property, and the availability of funding and staffing to accomplish the project's purpose adequately. Furthermore, a Feasibility Study presents boundary alternatives, general land management strategies, and ensures integrated ecosystem management principles are considered.

The Feasibility Study also must meet the requirements of the Wisconsin Environmental Policy Act (WEPA) and its implementing codes. Certain DNR actions require an Environmental Assessment (EA) or Environmental Impact Statement (EIS). The proposed Paradise Valley Addition study requires an EA under NR 150 of Wisconsin's Administrative Code. The EA process is used to evaluate the likely impacts of a proposed project on the human environment. The EA also helps determine whether an activity's impacts will be significant so as to warrant a full Environmental Impact Statement process.

All interested parties were invited to a public informational meeting September 18, 2008 at the Ottawa Town Hall. The department received 119 written comments at the meeting, with the majority voicing strong support for Option 3, the largest acreage option. Based on feedback received, the Department will consider the proposed 6,318-acre Option 3 project boundary with an acreage goal of 4,000 acres. The completed feasibility study was available for a two-week public comment period ending January 28, 2009. The department received a total of 38 comments, with the majority supporting the proposal for its positive effect on land preservation and recreational opportunities. A minority of comments were received opposing the project due to concerns related to the proximity of public hunting to residences and potential affects on property values and zoning within the project area. The Department will forward the revised document, along with the summary public involvement log, to the Natural Resources Board for their consideration at the March NRB meeting.

Questions, ideas or comments on this proposed project should be directed to:

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## EXECUTIVE SUMMARY

This feasibility study considers establishing the Paradise Valley Addition of the Kettle Moraine State Forest–Southern Unit. The proposed property is located in Waukesha County with the majority of the boundary in the Town of Ottawa and a smaller acreage in the Town of Eagle. Department staff considered available natural resource information along with the public’s input to delineate a 6,318 acre project boundary that includes two undeveloped lakes, several large wetlands, tracts of southern forest, and other lands suitable for habitat development and public recreation. However, the Department will consider this boundary as a “focus area” to prioritize acquisition with a maximum goal of 4,000 acres.

Located in Waukesha County, the proposed Paradise Valley Addition is among the state’s most populated and rapidly developing areas. For several years, there has been a growing interest among local citizens, landowners, conservation organizations, local governments, and DNR staff to conserve additional land for wildlife habitat and public recreation in the southeastern part of the state. Establishing the Paradise Valley Addition offers potential for habitat protection, ecological connectivity, and additional recreation opportunities in southeast Wisconsin.

Through acquisition the Department can:

- Develop and manage high priority habitat types including native grasslands, oak savanna (a globally rare community type), southern forest, and wetlands to benefit game species and wildlife of greatest conservation need as identified in the *Wisconsin Wildlife Action Plan* (WDNR 2005);
- Protect and preserve two currently undeveloped lakes, Larkin and Beaver Dam, along with their watersheds;
- Provide ecological connectivity between Larkin Lake, the 350-acre Waukesha Land Conservancy parcel and Beaver Dam Lake;
- Preserve the primary environmental corridor identified in Southeastern Wisconsin Regional Planning Commission (SEWRPC) plans and adopted into Town and County plans;
- Increase nature-based public recreation and lake access opportunities within Waukesha County and the surrounding area.

On September 18, 2008, the Department held a public open house at the Ottawa Town Hall. Approximately 167 people attended with the majority of them expressing desire for the Department to proceed with this project using the acreage in Option 3. Department staff have been active in individually contacting neighboring land owners and local government officials. Comments received to date have been in favor of the proposed project. Based on information gathered from Department resource specialists and comments received from the public during the review process, the Department concludes the project is feasible and does not require an environmental impact statement process.

## PROPOSED PROJECT

### Project Description

The proposed project focuses on establishing the Paradise Valley Addition of the Kettle Moraine State Forest–Southern Unit, in Waukesha County. While the proposed project boundary includes 6,318 acres, the maximum acreage goal is 4,000 acres. The larger boundary functions as a focus area giving the Department authority to pursue the highest priority lands needed to meet the project goals.

The Department anticipates primarily using fee title acquisition for the proposed boundary addition, however, will consider the use of easements with public access to develop habitat and provide public recreation. Based on a current market value of \$3,000 per acre for non-buildable lands and \$6,000-\$14,000 for buildable uplands (depending on zoning) the total acquisition cost estimate for the 4,000-acre boundary addition is \$20 million, of which approximately \$15 million would come from the state stewardship program and the remainder from other partners. *Refer to the Proposed Project Boundary map in the Appendix.*

The proposed Paradise Valley Addition borders the northwest corner of the Kettle Moraine State Forest–Southern Unit. The landscape in this area is well documented for its high value natural scenic, historic, scientific, and recreational features. SEWRPC completed a Park and Open Space Plan for the Town of Ottawa (2001), which identifies the primary environmental corridors that include the best remaining woodlands, wetlands, and wildlife habitat areas and notes their “immeasurable environmental and recreational value.”

The boundary of the proposed Paradise Valley Addition closely follows the established primary environmental corridor and offers the potential to connect Larkin Lake, the 350-acre Waukesha Land Conservancy parcel, Beaver Dam Lake and acres of high priority habitat types. *Refer to the Primary Environmental Corridors map in Appendix.* Existing land cover in the proposed boundary area is summarized below:

Land Cover	Acreage
Agriculture	2729.31
Woody Wetlands	1229.79
Deciduous Forest	1182.11
Emergent Herbaceous Wetlands	613.31
Developed, Open Space	287.26
Open Water	103.87
Grassland/herbaceous	82.30
Evergreen Forest	39.33
Mixed Forest	33.26
Shrub/scrub	24.52
Barren Land	2.23
<b>TOTAL</b>	<b>6327</b>

*Source: 2001 USGS National Land Cover Database (data compiled December 2008)*

If the Paradise Valley Addition project is approved by the Natural Resources Board, a team of Wildlife, Parks, Facilities and Lands, and Endangered Resources staff will develop a mathematical and Geographic Information Systems (GIS) model to prioritize land acquisitions. The model will weight the criteria listed below so that each potential acquisition receives a ranking based upon how well it meets the established priorities. This is especially important as the Department only aims to acquire 4,000 acres (63%) of the 6,318 acres within the project boundary. Lands that receive a low ranking or are unsuitable for habitat or public recreation will not be pursued. Priority will be given to acquisitions that meet several of the following criteria:

- Are within SEWRPC Environmental Corridors (primary or secondary)
- Are cost-shared with other Partners
- Are within the “Core Area” (to be defined)
- Are adjacent to existing conservation properties
- Contain or have restoration potential for the priority habitat types identified in the *Wisconsin Wildlife Action Plan* for the region including: bur oak openings, large sedge meadows, wet to mesic prairies, and older age stands of contiguous forest.
- Provide quality public access and recreation
- Contain restorable wetlands
- Have a high cost/benefit ratio

## **Project Goals**

Establishing the Paradise Valley Addition offers potential for habitat protection, ecological connectivity, and additional recreation opportunities in southeast Wisconsin. Located in Waukesha County, the proposed Paradise Valley Addition is among the state’s most populated and rapidly developing areas. For several years, there has been a growing interest among local citizens, landowners, conservation organizations, local governments, and DNR staff to conserve additional land for wildlife habitat and public recreation west of the Kettle Moraine State Forest-Southern Unit (KMSF-SU).

The general project area was referred to historically as “Paradise Valley” and includes several large wetland valleys (basins) surrounded by high quality oak openings, southern forest, and agricultural land that was prairie at one time. Intense residential development to the east of the KMSF-SU helped spur interest in conserving land west of the forest while there is still opportunity. The Waukesha Land Conservancy and Waukesha County Parks already own several parcels in the area. Most of the conservation interest has been in conserving the land for wildlife and fish habitat along with providing low impact nature-based public recreational opportunities.

The major goals of the proposed project are to:

- Develop and manage high priority habitat types including native grasslands, oak savanna (a globally rare community type), southern forest, and wetlands to benefit game species and wildlife of greatest conservation need as identified in the *Wisconsin Wildlife Action Plan* (WDNR 2005);
- Protect and preserve two currently undeveloped lakes, Larkin and Beaver Dam, along with their watersheds;
- Provide ecological connectivity between Larkin Lake, the 350-acre Waukesha Land Conservancy parcel and Beaver Dam Lake;
- Preserve the primary environmental corridor identified in Southeastern Wisconsin Regional Planning Commission (SEWRPC) plans and adopted into Town and County plans;
- Increase nature-based public recreation and lake access opportunities within Waukesha County and the surrounding area.

### **Property Designation**

The proposed project would be established as the Paradise Valley Addition of the Kettle Moraine State Forest–Southern Unit. At this time, the land management classification that most closely coincides with the project goals is the Habitat Management Area, described in Wisconsin Administrative Code NR 44.06(1)(5). It states the management objective is to “provide or enhance habitat, whether upland, wetland or aquatic, to support specific species of plants or animals. Habitats and communities in areas with this designation may be managed for a wide variety of purposes, including focused species production and protection. Areas that initially do not have desired habitat conditions but have a high potential to be restored to those conditions may be included under this classification.” However, the master planning process will establish the authorized management classification and development of the property.

### **Need**

Acquisition of the proposed Paradise Valley Addition furthers the Department’s priorities for habitat protection, ecological connectivity and recreational opportunities. The project is consistent with the Department’s *Wildlife Action Plan* (2005), which identifies the state’s priority Conservation Opportunity Areas (COA), and high priority Species of Greatest Conservation Need (SGCN) and natural communities. The Kettle Moraine State Forest is noted in the Department’s *Land Legacy Report* (2006) for its conservation significance and recreation potential. Finally, the project is consistent with plans written by the Southeastern Wisconsin Regional Planning Commission, Waukesha County and the Town of Ottawa that indicate the importance of preserving this area based on the

priority natural resource base and the recreation opportunities afforded in the southeastern portion of the state.

### Habitat Protection

Acquiring this property represents a major opportunity to sustain several high priority natural communities in the Southeast Glacial Plains Ecological Landscape. Protecting, preserving and restoring these natural communities offers potential for the associated SGCN to thrive and prevents the threat of diminishing priority habitats and related species. It also provides management opportunities for reducing invasive species.

The *Wisconsin Wildlife Action Plan* (WDNR 2005) identifies the following major opportunities for conservation of natural communities within the Southeast Glacial Plains Ecological Landscape: Southern Dry-mesic Forest, Oak Savannas (Oak Opening and Oak Woodland), Prairie, Emergent Wetland, Shrub Carr, and Sedge Meadow. All of these habitat types are either already present within the proposed project area or could be restored there.

Of particular interest among the natural communities is the potential to restore oak savannas, a rare community in Wisconsin and throughout its entire range. Oak savanna is one of the most threatened plant communities in the Midwest. Opportunities to increase oak savanna acreage exist in the Southeast Glacial Plains Ecological Landscape with the KMSF-SU among the best opportunities for restoration (WDNR 2007).

Among the Priority Conservation Actions identified in the *Wildlife Action Plan* for this ecological landscape is to “focus management and restoration efforts in the southern Kettle Moraine Conservation Opportunity Area to emphasize oak openings, oak woodland and low prairie communities with smaller patches of dry prairie, open marshy wetlands, and patches of older closed canopy forest.” The proposed project would focus on the potential to restore Bur Oak Openings, a natural community type of global ecological significance, in the South Kettle Moraine COA. *Refer to COA map in the Appendix.*

Wetlands are important for providing critical habitat for wildlife, water storage to prevent flooding and protect water quality, and providing recreational opportunities. They are often interspersed with many other major community types; therefore, restoring the health of the wetlands also benefits the overall health and functioning of the other ecological systems in the same watershed. Wisconsin has lost 47% of the 10 million acres of wetlands present before statehood. The DNR’s strategic wetland plan, *Reversing the Loss* (2000), prescribes wetland protection through acquisition and the restoration of wetlands as two major goals to ensure the long term viability of wetlands in the state.

The proposed project includes approximately 2,000 acres of wetland as well as two undeveloped lakes, Beaver Dam Lake and Larkin Lake. Concentrating acquisition and management efforts around wetlands and shallow lakes in Waukesha County provides water quality protection for the long term health of these ecosystems. The upland buffer



around these wetlands also provides the much needed habitat for wildlife species to complete their life cycles. The adjacent uplands provide nesting cover for waterfowl, suitable habitat for turtles to lay eggs, and a variety of other niches for insects, reptiles, furbearers and other wildlife. This project has the potential to provide hunting, trapping, and bird watching opportunity along with the breeding and migratory habitat for wildlife, similar to the recently restored Turtle Valley (Town of Lake Mills, Walworth County), Princes Point (Town of Cold Spring, Jefferson County), and Zeloski Marsh (Town of Lake Mills, Jefferson County) Wildlife Areas.

Considering the larger, 4000-acre goal of the preferred alternative represents a major opportunity for grassland bird management within Wisconsin. The proposed boundary of the Paradise Valley Addition is designed to complement the habitat provided by the Scuppernong River Habitat Area, an area of the KMSF identified as a priority site for grassland birds due to its expansive grasslands and sedge meadows. In *Managing Habitat for Grassland Birds, a Guide for Wisconsin* (Sample and Mossman 1997), the authors identify the Paradise Valley as part of a priority landscape for grassland bird management. They recommend expanding, restoring, buffering, and connecting native grassland and sedge meadow in the area. The authors also recommend careful coordination of grassland, wetland, savanna, and southern interior forest habitat projects since all these types are present in the area. It is precisely because of this diversity of habitat that the Paradise Valley project could be such a productive wildlife habitat addition to the KMSF-SU.

### Ecological Connectivity

Beaver Dam Lake is one of the last undeveloped shallow lakes in Waukesha County and is surrounded by an open rolling landscape. The area offers great potential to restore a mosaic of grasslands and wetlands in the surrounding landscape to benefit wetland and grassland birds. It is located on the southern edge of the proposed project boundary and would provide an ecological link between the KMSF-SU and other properties.

The Paradise Valley Addition has the potential to link the open habitats of the Scuppernong River Habitat Area, the largest wet prairie east of the Mississippi River, to the open landscape of rural Jefferson County and the associated wildlife areas of Princes Point, Lake Mills and Rome Pond. The existing Scuppernong River Habitat Area within the KMSF-SU has been identified as a Priority Conservation Area within the *Wisconsin Wildlife Action Plan* and is classified as being of global ecological significance. The Paradise Valley project ensures the future of true landscape scale management and the future of wildlife species that depend on it.

In addition, the Waukesha Land Conservancy owns approximately 350 acres of extensive wetland complex between Beaver Dam Lake and the northern area around Larkin Lake providing a further ecological link. The area includes tamarack swamp, a regionally important natural community that is declining in Southern Wisconsin and that supports a diversity of plant and animal communities, as well as restorable wetlands and open farmland that could be converted to grassland habitat.

The SEWRPC report (2001) further discusses the importance of ecological connectivity and of protecting the primary environmental corridors from incompatible rural and urban use. The report defines environmental corridors as “areas in the landscape containing especially high value natural, scenic, historic, scientific, and recreational features. They contain the best remaining woodlands and wetlands, wildlife habitats, undeveloped shorelands and floodlands, groundwater recharge and discharge areas, and steeply sloped lands in the Region. High value lakes, wetlands, prairies, and woodlands become more valuable when linked by corridors of concentrated natural resource activity.” Much of the proposed Paradise Valley Addition coincides with the designated primary environmental corridor. *Refer to the Primary Environmental Corridors map in the Appendix.*

### Recreational Opportunities

One focus of the proposed project is to address the need for public lands and recreation opportunities in the southeastern part of the state. This area is the most populated and under some of the most intense development pressure statewide. The Department’s *Statewide Comprehensive Outdoor Recreation Plan* (2006) suggests targeting protection and acquisition efforts in southern areas before population or land value pressures become too great for further purchases and/or environmental preservation. Similarly, the Department’s *Fish, Wildlife and Habitat Management Plan* (2007) identifies providing public land for recreation and access to lakes and state lands as major opportunities and challenges.

The Paradise Valley Addition would provide additional land for public recreation and lake access within one hour of the largest population centers in Wisconsin. The adjacent Scuppernong and KMSF-SU are extensively used for a range of recreation activities. Providing more acres for recreation users to spread out will help to alleviate any potential overcrowding and provide more opportunities.

Finally, the proposed project has the potential to contribute 4.5 miles of old railroad corridor to connect the Glacial Drumlin State Trail to Ottawa Lake. Waukesha County would likely take the lead on the portion north and south of the Paradise Valley project. The Glacial Drumlin State Trail travels through 10 small towns between Cottage Grove and Waukesha. The 52-mile trail leads users through farmlands and glacial topography. A designated route between this trail and the KMSF-SU would be an asset to the trail system.

### **Management Goals**

Upon project approval, the Department will complete an amendment to the existing Kettle Moraine State Forest master plan. Until that time, management of the proposed Paradise Valley Addition will be consistent with the goal and objectives stated in the

Kettle Moraine State Forest-Southern Unit master plan (WDNR 1991). The property will provide natural resource benefits with resource-based outdoor recreation opportunities while protecting the diverse native species and ecosystems of the project area. At this time, no intensive recreational developments have been designated. Any future management and development will be consistent with the property master plan.

A team of DNR staff considered available resource information along with the public's input to delineate a 6,318 acre project boundary that includes two undeveloped lakes, several large wetlands, tracts of southern forest, and other lands suitable for habitat development and public recreation. This project boundary is designated as a "focus area" where the Department and other partners will attempt to acquire large, central parcels to form the core property as well as other key tracts to serve as an environmental corridor within the agricultural landscape.

On lands not owned by the state, Department staff will work with willing landowners to implement farmland and other conservation practices by utilizing existing federal, state, and non-profit grant programs, such as the Conservation Reserve Program (CRP) and Managed Forest Law (MFL). These habitat based management objectives will not only benefit wildlife and fish, but also the multitude of people that reside in Waukesha County and the surrounding area. These objectives will improve water quality, reduce soil erosion, reduce nutrient loads in watersheds, and provide thousands of hours of nature based recreation annually, including bird watching, hiking, hunting, fishing, and boating.

Within the focus area, the Department aims to acquire 4,000 acres or 63% of the total land within the project boundary. This will allow the Department to focus acquisition on lands that provide the best conservation and recreation benefits feasible. Management objectives would focus on the following:

- Enhancing 1,000 acres of existing wetland and upland habitat, including southern forest;
- Establishing 800 acres of native prairie and cool season grasslands;
- Restoring 400 acres of drained wetlands; and
- Establishing 300 acres of southern forest and oak savanna.

In general, in upland areas that were cropped or pastured prior to state ownership, the Department intends to develop open grasslands or oak savanna by seeding those areas to native grasses and forbs. In areas adjacent to large stands of southern forest, open upland areas may be planted to native forest types. Maintenance of established grass sites will be accomplished through periodic mowing and prescribed burning to keep woody vegetation from encroaching and taking over the site.

Areas that have established upland brush may be managed using prescribed burning or may be converted to native type grassland cover through a variety of means including herbicide treatment, mowing and/or burning followed by no-till seeding. Lowland brush areas and vegetated types (i.e. sedge meadows) will be managed primarily through

periodic prescribed burning although mowing may be utilized during the frozen months or extremely dry conditions.

Some parcels within the proposed project boundary are known to contain degraded or drained wetland areas. Under state ownership, the intent would be to improve or restore the converted wetland areas to provide maximum benefit for a variety of wildlife species and maintain them in a hemi-marsh aspect.

Existing forest stands will be managed to reduce invasive species and promote native tree species and habitat diversity. A small component of existing forest may be managed as conifer plantation to meet the needs of the forest products industry. Forest areas will be managed through timber sales and Department staff management activities.

## **ENVIRONMENTAL DESCRIPTION**

### **Property Perspective**

#### Physical

The topography, physical geography, and soils of Waukesha County are largely the result of glaciations ending approximately 10,000 years ago in Wisconsin. As noted in the description of the County's geology and physiography (Waukesha County 2006), the dominant physiographic and topographic feature in Waukesha County is the Kettle Moraine, an interlobate glacial deposit formed between the Green Bay and Lake Michigan lobes of the continental glacier that moved in a generally southerly direction from its origin in what is now Canada. The Kettle Moraine is a complex system of kames, kettle holes and eskers that is oriented in a general northeast-southwest direction across western Washington, Waukesha, and Walworth Counties.

The proposed project area lies within the Rock River Basin and is divided among the Bark River Watershed and the Scuppernong River Watershed. Many of the lakes in the Bark River Watershed are experiencing heavy development pressure or have extensive development around them. A study of the watershed describes that while some wetlands have been drained or filled, a significant amount of wetland remains. Rapid development in Waukesha County is considered the greatest threat to the basin's wetlands (WDNR Bark 2001).

Scuppernong River Watershed is not experiencing similar rapid development. Predominate land use is agriculture though there is a significant public ownership in the Kettle Moraine State Forest and two state wildlife areas. This includes large forested tracts and wetland areas; however, other wetland areas have been drained for agriculture. The Village of Palmyra, population 1,766, is the only urban area in the watershed (based on 2000 Census) (WDNR Scuppernong 2001).

SEWRPC defines wetlands as areas in which the water table is at, near, or above the land surface and that are characterized by both hydric soils and the growth of sedges, cattails, and other wetland vegetation. In general, wetlands occur in depressions and near the bottom of slopes, particularly along lakeshores and stream banks, and on large land areas that are poorly drained (2001). Wetlands are scattered throughout Waukesha County and total approximately 52,661 acres or about 14% of the County. Approximately 2,000 acres of wetland are present within the proposed project boundary.

Streams within the project area include the Bark River and Scuppernong Creek, which both have large wetland areas associated with them. Lakes in and around the project area include Larkin Lake, Reagons Lake, School Section Lake, and Pretty Lake in the Town of Ottawa, and Beaver Dam Lake in the Town of Eagle. School Section Lake has the largest surface area of 125 acres, yet has a maximum depth of only eight feet. Refer to the table below for a comparison.

Comparison of Named Lakes in the Proposed Project Area							
Lake	Watershed	Township	Surface Area (acres)	Max. Depth (feet)	Lake Type	Trophic State	Classification Code (s)
Beaver Dam	Bark	Eagle	36	NA	SE	Eutrophic	FAL
Larkin	Bark	Ottawa	57	4	SP	NA	FAL,AQ-3(RSH)
Pretty*	Bark	Ottawa	64	35	SE	Oligo-mesotrophic	FAL
Reagon	Bark	Ottawa	16	10	SP	NA	FAL,AQ-2(RSH)
School Section*	Bark	Ottawa	125	8	DG	Mesotrophic	FAL,AQ-2(RSH)

Source: Waukesha County Land and Water Resource Management Plan 2006-2010, January 2006.

Lake Type

Drainage Lake (DG) = Impoundments and natural lakes with the main water source from stream drainage.  
Seepage Lake (SE) = Landlocked. Water level maintained by groundwater table and basin seal. May have intermittent outlet.  
Spring Lake (SP) = Groundwater fed lakes always with an outlet of substantial flow.

Classification Codes

FAL = Fish & Aquatic Life. Default Classification equivalent to Warm Water Sport Fish Community.  
AQ-2 = Identifies Aquatic Areas of countywide or regional significance.  
AQ-3 = Identifies Aquatic Areas of local significance.  
RSH = Rare Species Habitat. Aquatic areas that support endangered, threatened, or “special concern” species designated by the DNR.  
\* = Lake has a Lake Management District formed under Chapter 33, Wisconsin Statutes.

Biological

Several studies note the ecological significance of the proposed project area. Staff in the Bureau of Endangered Resources conducted an environmental review of the proposed project area and an area within a one mile buffer of the project boundary (Boyle 2008). Results indicate a number of rare plant, animal and natural communities in need of conservation<sup>1</sup>.

The *Wisconsin Wildlife Action Plan* (WDNR 2005) identifies the priority conservation opportunity areas for wildlife species of greatest conservation need (SGCN) in the Southeast Glacial Plains Ecological Landscape; the proposed project area is identified as a priority COA. Refer to COA map in the Appendix. The following are listed as high priority SGCN and natural communities that are either present or could be restored within the proposed project area. The communities represent major opportunities for management, protection or restoration in the ecological landscape.

<sup>1</sup> Natural Heritage Inventory Data is exempt from State of Wisconsin Open Records Law. The data is considered sensitive for several reasons and thus not appropriate for general public distribution. Complete results are on file with the Area Wildlife Supervisor.

<b>High Priority SGCN and Natural Communities in the Proposed Project Area:</b>	
<b>SGCN</b>	<b>Natural Communities</b>
American Bittern	Calcareous Fen
American Golden Plover	Impoundments/Reservoirs
Black Tern	Oak Opening
Blue-winged Teal	Oak Woodland
Blue-winged Warbler	Southern Dry-mesic Forest
Buff-breasted Sandpiper	Southern Sedge Meadow
Dunlin	Southern Tamarack Swamp
Field Sparrow	
Great Egret	
Marbled Godwit	
Redhead	
Short-billed Dowitcher	
Solitary Sandpiper	
Willow Flycatcher	
<i>Source: WDNR, Wisconsin's Strategy for Wildlife Species of Greatest Conservation Need, 2005.</i>	

Additionally, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) has designated primary environmental corridors in Waukesha County. Much of the proposed project boundary includes areas of the designated primary environmental corridor. Among the important components in the environmental corridor is one Class II natural area, Beaver Dam Lake, a natural area of regional significance; and two Class III natural areas, County Highway ZC Lowlands and Larkin Lake, natural areas of local significance.

Beaver Dam Lake, also known as Beaver Dam Marsh, is perhaps southeast Wisconsin's biggest and best remaining example of deep marsh with natural hydrological regime. The area has minimal shoreline development and residential/agricultural impact. It is valued for its recreational hunting, wildlife watching, and educational and research monitoring including: 20 species of migrant or breeding waterfowl (ducks and geese); 38 species of other migrant or breeding water birds and marsh birds (grebes, herons, rails, shorebirds, etc); 78 species of migrant land birds (plus inventory of breeding or land birds of recently acquired and restored grasslands). In the Beaver Dam Marsh area there are an estimated 136 total species including two state-endangered (Red-necked grebe, Forster's Tern) and two state-threatened (Great Egret, Osprey) as migrants, plus 17 Wisconsin DNR-listed birds of conservation need (Bielefeldt 2008).

The 350-acre CTH ZC Lowlands are partially owned by the Waukesha Land Conservancy. Although disturbed by past land use activities, it represents an extensive wetland complex. Larkin Lake is described as a very shallow, mostly undeveloped 57-acre lake. The surrounding uplands have been grazed and plowed, and are threatened by future residential development. The small, approximately 1-acre island within Larkin

Lake is importantly historically and is believed to have been a burial ground for Native Americans.

### Cultural

Results of a Department check on the cultural resource data base identified several recorded prehistoric camp sites within the proposed expansion area. All sites are protected from unauthorized disturbance by Wisconsin Statutes 44.40. Any developments contemplated in these areas may require further investigations to determine the character and significance of each site. Additionally, a number of historic structures, largely farm related, are located in the project area. Other, as yet unrecorded, archaeological sites and historic structures likely exist within the expansion area as well (Dudzick 2008).

Presently, the majority of the project area is located in the Town of Ottawa, population 3,850 with the Beaver Dam Lake portion of the project in the Town of Eagle, population 3,492. The nearest municipalities include the Villages of Dousman (1,808), North Prairie (1,855) and Eagle (1,772)<sup>2</sup>. Interstate 94 runs east-west through Waukesha County approximately 10 miles north of the project area. State Highway 67 runs between Dousman and Eagle to the east of the proposed project; County Highways D, ZC, CI and N provide access through the project area.

## **Regional Perspective**

### Ecological Landscapes

The proposed project area falls within the Southeast Glacial Plains Ecological Landscape. This landscape makes up much of the non-coastal land area in southeast Wisconsin and is made up of glacial till plains and moraines. Historically, the vegetation consisted of a mix of prairie, oak forests and savanna, and maple-basswood forests. Lower portions of the landscape included wet-mesic prairies, southern sedge meadows, emergent marshes, and calcareous fens.

Agricultural and residential interests in this area have significantly altered the historic vegetation. Current vegetation is primarily agricultural cropland. Remaining forests occupy only about 10% of the land area and consist of maple-basswood, lowland hardwoods, and oak. No large mesic forests exist today except on the Kettle Interlobate Moraine which has topography too rugged for agriculture. Some existing forest patches that were formerly savannas have succeeded to hardwood forest due to fire suppression (WDNR Ecological Landscapes 2006).

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<sup>2</sup> Values based on 2005 estimated municipal populations in Waukesha County.



Land Use and Trends

Waukesha County is an estimated 584 square miles (373,760 acres). The 2007 population estimate for Waukesha County is 379,333 (3<sup>rd</sup> most populated county in the state) with the City of Waukesha the most populated municipality at 67,880. Waukesha County has an estimated 648.9 persons per square mile compared to the statewide 98.8 persons per square mile (based on 2000 census data).

As the County continues to experience rapid growth, trends continue to show the changes in urban and non-urban land use. The table below illustrates the greatest shift occurred in non-urban, agricultural lands with a change from 200,241 acres in 1963 to 112,611 acres in 2000, a decrease of nearly 44%. Comparatively, during the same time, residential increased by 167% and is the main urban land use based on acreage.

<b>Change in Land Use Acres in Waukesha County: 1963-2000</b>					
<b>Land Use Category</b>	<b>1963</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
<b>Urban</b>					
Residential	28,148	35,476	50,745	59,247	75,221
Commercial	1,197	1,831	2,754	3,827	5,351
Industrial	924	1,758	2,747	3,802	5,525
Transportation,Communication, & Utilities	16,079	18,545	21,867	22,805	30,001
Governmental and Institutional	2,550	3,587	4,037	4,215	4,887
Recreational	3,311	4,605	5,756	6,465	8,253
Unused Urban Land	8,509	8,516	8,017	7,025	7,806
<b>Subtotal Urban</b>	<b>60,718</b>	<b>74,318</b>	<b>95,923</b>	<b>107,386</b>	<b>137,044</b>
<b>Non-urban</b>					
Natural Areas					
Surface Water	16,076	16,461	16,753	16,878	16,891
Wetlands	52,588	51,660	51,233	51,978	52,661
Woodlands	31,181	30,818	29,472	29,584	28,931
<b>Subtotal Natural Areas</b>	<b>99,845</b>	<b>98,939</b>	<b>97,458</b>	<b>98,440</b>	<b>98,483</b>
Agricultural	200,241	184,390	161,558	142,428	112,611
Unused Rural & Other Open Lands	10,786	13,943	16,651	23,336	23,397
<b>Subtotal Non-urban</b>	<b>310,872</b>	<b>297,272</b>	<b>275,667</b>	<b>264,204</b>	<b>234,491</b>
<b>TOTAL</b>	<b>371,590</b>	<b>371,590</b>	<b>371,590</b>	<b>371,590</b>	<b>371,535</b>

Source: Comprehensive Development Plan for Waukesha County, <http://www.waukeshacounty.gov/page.aspx?SetupMetalId=12082&id=11394>. This is an updated version of, "A Development Plan for Waukesha County", 1996. It is set to go to public hearing before the end of the year; then to the County Board for review and adoption.

Note: As part of the regional land use inventory for the year 2000, the delineation of existing land use was referenced to real property boundary information not available for the 1990 and prior inventories. This change increases the precision of the land use inventory and makes it more useable to public agencies and private interests throughout the Region. As a result of the change, however, year 2000 land use inventory data are not strictly comparable with data from the 1990 and prior inventories. At the county and regional level, the most significant effect of the change is to increase the transportation, communication, and utilities category—the result of the use of actual street and highway rights-of-way as part of the 2000 land use inventory, as opposed to the use of narrower estimated rights-of-way in prior inventories. This treatment of streets and highways generally diminishes the area of adjacent land uses traversed by those streets and highways in the 2000 land use inventory relative to prior inventories.

### Existing Recreation Opportunities

The County is experiencing an increase in need for public recreation lands as urban areas expand. Waukesha County is also faced with the challenge of keeping upland, shoreline and aquatic habitat intact and functional in the midst of rapid growth and urban sprawl.

Based on a Fish and Wildlife Conservation report conducted by the DNR (2005), Waukesha County had over 62,000 licensed fishermen (2<sup>nd</sup> highest) and over 32,000 licensed hunters (highest in the state). Over 26,000 acres of state land, including wildlife and fisheries areas, state natural areas and the Kettle Moraine State Forest-Southern Unit, are open for recreation. Approximately 24,400 acres are open to hunting; there are 29 lakes with public access and 55 miles of trout streams.

Nearly 30 miles long and extending from the Village of Dousman almost to the City of Whitewater, the 20,000-acre Kettle Moraine State Forest-Southern Unit is among southeastern Wisconsin's largest recreation area. Visitors can participate in a full range of recreation opportunities from camping, hiking, mountain biking, horse riding, swimming, picnicking, fishing, and hunting, to cross-country skiing or snowmobiling. The KMSF-SU includes other associated recreation areas such as the Scuppernong River Habitat Area, notable as the largest wet prairie east of the Mississippi River, as well as the Lapham Peak Unit, which provides hiking, backpacking, and cross-country skiing on lighted trails.

Within Waukesha County, the Department also provides recreation opportunities on the Vernon Wildlife Area and Big Muskego Lake Wildlife Area, ten State Natural Areas, and sections of the Glacial Drumlin State Trail and Ice Age National Scenic Trail.

Additionally, the Waukesha County Park System includes eight parks ranging from the 160-acre Muskego Park to the 580-acre Minooka Park, the largest of the county's parks. Recreation opportunities include biking, boating, family camping, picnicking, swimming and trail use.

## **PROPOSED COSTS**

### **Boundary Expansion Costs**

The Department anticipates primarily using fee title acquisition for the proposed boundary expansion with funding from the state Stewardship program. However, the Department will also consider the use of easements with public access to develop habitat and provide public recreation. Partners such as the Waukesha Land Conservancy and Waukesha County Parks are also expected to participate in land acquisition within the project boundary.

In addition to state stewardship funds, federal and other grant funds such as the North American Wetlands Conservation Act (NAWCA) and the Wetland Reserve Program (WRP) will be used to fund acquisition and easements where appropriate. Federal Farmland Preservation funds may be used to preserve agricultural lands. Based on a current market value of \$3,000 per acre for non-buildable lands and \$6,000-\$14,000 for buildable uplands (depending on zoning) the total acquisition cost estimate for the 4,000-acre boundary expansion is \$20 million, of which approximately \$15 million would come from the state stewardship program and the remainder from other partners.

The acquisition goal of 4,000 acres is only a portion (63%) of the 6,318 acre total project area within the boundary. Lands that are unsuitable as habitat or for public recreation will not be pursued. Land acquisition will be on a willing-seller basis with costs spread out over many years as owners have interest in selling and funds are available. The Department and other partners would like to acquire an average of 200 acres/year to complete the project by the year 2029.

### **Staffing and Operation Costs**

Existing DNR Wildlife (2), Lands (1), Endangered Resources (1), Forestry (1), and Parks (2) staff assigned to work in Waukesha County will be involved with the acquisition, development, and management of the Paradise Valley project. Additional Wildlife and Parks staff from within the Southeast Region will assist on special projects such as prescribed burning and other management projects. Other DNR staff such as water regulation specialists and construction engineers will provide their expertise and guidance on appropriate development projects.

Based on existing cover types within the proposed acquisition boundary and wildlife habitat priorities for Waukesha County, the table below lists the estimated acreages and costs associated with habitat development and property management. Considering that the acquisition of parcels within the proposed expanded project boundary is a long term process, and will be conducted as property and funding is available, it is difficult to predict or portray actual management costs that might be involved in a specific year or

for the duration of the project. In addition, techniques that will be utilized for development or maintenance of property acquired in the future may be highly variable and subject to changes in technology that affects overall expenditures.

<b>Initial Development Costs</b>			
<b>Practice</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total Cost</b>
Wetland restoration	400 Acres	\$1,000/Acre	\$400,000
Prairie/grassland establishment	800 Acres	\$150/Acre	\$120,000
Enhancement of existing habitat/control of invasives	1,000 Acres	\$75/Acre	\$75,000
Southern forest & oak savanna establishment	300 Acres	\$175/Acre	\$52,500
Trail establishment	4 Miles	\$3,000/Mile	\$12,000
Parking lot construction	6 Lots	\$2,000/Lot	\$12,000
Boundary posting and signage	6 Miles	\$750/Mile	\$4,500
<b>Total Costs</b>			<b>\$676,000</b>

<b>Annual Management Costs</b>			
<b>Practice</b>	<b>Annual units</b>	<b>Unit Cost</b>	<b>Total Cost</b>
Wetland management	100 Acres	\$50/Acre	\$5,000
Prescribed burning	75 Acres	\$40/Acre	\$3,000
Invasive species control	25 Acres	\$75/Acre	\$1,875
Trail/Boundary maintenance	4 Miles	\$250/Mile	\$1,000
<b>Total Annual Management Costs</b>			<b>\$10,875</b>

### **Funding Sources**

As new parcels are acquired, Wildlife and Parks staff will utilize a variety of funding sources to develop and/or maintain the wildlife habitat potential of the acquired lands. Currently, approximately 50% of general wildlife management work is funded through the Segregated Fish and Wildlife Account derived from the sale of hunting and fishing licenses. Some projects such as wetland development and grassland establishment or maintenance are commonly funded through bi-annual requests from specialized accounts derived from the sale of state waterfowl and turkey stamps as well as sharecrop revenues.

Because this project occurs in a Conservation Opportunity Area as identified in the Wisconsin Wildlife Action Plan, management activities will be eligible for State Wildlife Grant (SWG) funding. In addition, federal NAWCA grants will be pursued to complete wetland and grassland restoration projects. Recreation oriented projects would be funded from Parks segregated funds derived from the sale of Parks passes.

Monies are also allocated from the Stewardship fund to provide for supplies and services needed in identifying property access and boundary lines as well as posting of lands purchased with this funding source. Some types of habitat maintenance activities are also allowed utilizing the Stewardship derived dollars.

As the opportunity presents, Wildlife and Parks staff will have the option of entering into temporary sharecrop agreements with private parties to utilize agricultural lands on an interim basis until permanent wildlife habitat can be established. Farming on state wildlife areas can be done on a “crop-shares” basis or bid out as a contract with the payment going to the statewide wildlife management sharecrop fund. As they are available and we become aware of them, new funding sources and donations will be used in habitat and property development and maintenance activities on the Paradise Valley Addition of the KMSF.

## **PUBLIC INVOLVEMENT**

An important aspect of the Feasibility Study and EA process is to inform the public and affected landowners about the proposed project and gather their input. In late August and early September, the Department was active in contacting large-acreage property owners regarding the proposed project. In early September, the Department mailed a map and summary of the project and proposed options to 650 landowners within the project area and ½ mile buffer. The letter also announced the upcoming public open house to discuss the boundary alternatives.

Approximately 167 people attended the public open house September 18, 2008 held at the Ottawa Town Hall in Dousman. Attendees were asked to complete a questionnaire to gauge interest in the options presented. The Department received 119 completed surveys with the majority of them (79) expressing a desire for Option 3. Additionally, the Department received positive support for Option 3 during landowner contacts and from comments received via phone and email.

In December, the Department presented the proposed project to the Town Board and Planning Commission in the Town of Eagle. All local governments, including the Towns of Eagle and Ottawa and Waukesha County, have been informed of the proposed project and have not voiced any objections to the project as outlined in this study. Several local conservation organizations have expressed support for the project including the Waukesha County Environmental Action League (WEAL), the Mid-Kettle Moraine Partners Group, and the Waukesha County Conservation Alliance.

The completed feasibility study was available for a minimum two-week public comment period ending January 28, 2009. The Department received a total of 38 comments: 32 in support, 5 in opposition and 1 undecided. Refer to the Appendix for a summary of comments received and the public involvement log. All original comments are on file

with the property manager. The Department will present the study to the Natural Resources Board for their consideration at the March NRB meeting.

## EVALUATION OF PROJECT SIGNIFICANCE

### Environmental Effects and Their Significance

Acquisition of the Paradise Valley Addition will be a long-term process with the potential for long-term environmental benefits. Waukesha County, in southeastern Wisconsin, is among the most populated and rapidly developing areas of the state. Preserving priority natural communities and two undeveloped lakes, and providing public land for recreation in southeastern Wisconsin will have long-term benefits to the area.

Several of the natural communities represent major conservation opportunities as identified in the Wildlife Action Plan (WDNR 2005). Oak savanna is a rare community in Wisconsin and throughout its entire range. Opportunities to increase oak savanna acreage exist in the Southeast Glacial Plains Ecological Landscape with the KMSF-SU among the best opportunities for restoration.

Additionally, this project has potential for wetland restoration. Wetlands are important for providing critical habitat for wildlife, water storage to prevent flooding and protect water quality, and providing recreational opportunities. They are often interspersed with many other major community types; therefore, restoring the health of the wetlands also benefits the overall health and functioning of the other ecological systems in the same watershed.

Management activities to improve or restore converted wetland areas could include using heavy equipment to plug ditches, break drain tile lines, excavate filled areas and spread viable wetland soil that contains local native wetland vegetation seeds and root stock. Some management activities, such as prescribed burning and herbicide use, have the potential to create short-term environmental effects; however, those effects are minimal compared to the long-term beneficial improvements to the wetland habitat. All management will be in accordance with the Department's *Reversing the Loss* report (2000), which discusses strategies for protecting and restoring wetlands in Wisconsin. Department staff will complete any required permitting and approval processes.

The overall potential long-term environmental effects of the proposed Paradise Valley Addition outweigh any short-term environmental effects associated with the required management practices. Many of these priority habitats require active management including techniques such as herbicide application, planting native grasses and forbs utilizing a no-till seeder, and periodic mowing and prescribed burning. Any negative short-term environmental effects associated with these management techniques will be minimized by following the Department best management practices and appropriate Department Manual Codes (Pesticide Application – Manual Code 4230.1; Prescribed Burn Handbook 4360.5).

### **Significance of Cumulative Effects**

Establishing the Paradise Valley Addition would have a positive cumulative effect on the environment. Much of Waukesha County is experiencing rapid development. This project offers the potential for habitat protection of priority natural communities; creates ecological connectivity between existing Department properties and along a designated primary environmental corridor; and provides public land to meet the recreation demands of southeastern Wisconsin. Cumulative effects associated with management are minimal compared to the long-term beneficial effects of restoring priority habitats and the associated wildlife species.

### **Significance of Risk**

There is little or no risk associated with the proposed purchase of land or land rights by the Department. Land management will focus on managing for high priority habitat types including native grasslands, oak savanna, southern forest and wetlands to benefit game species and wildlife of greatest conservation need. Some of the natural communities require active management that pose potential risks. However, those risks are minimized by following Department approved procedures and management practices.

While the use of fire for prescribed burns carries the potential risk of wild fire, the benefits associated with this established land management technique exceed the risk. In addition, techniques used in wetland restoration have some associated risk of flooding. Those risks will be minimized by following established best management practices and receiving prior approval and permitting.

### **Significance of Precedent**

The proposed project and management are not precedent setting. Acquisition of the proposed Paradise Valley Addition furthers the Department's priorities for habitat protection, ecological connectivity and recreational opportunities. It is also consistent with plans written by the Southeastern Wisconsin Regional Planning Commission, Waukesha County and the Town of Ottawa that indicate the importance of preserving this area based on the priority natural resource base and the recreation opportunities afforded in the southeastern portion of the state. Management will be consistent with that stated in the property master plan and will not conflict with local, state or federal agencies.

### **Significance of Controversy**

On September 18, 2008, the Department held a public open house at the Ottawa Town Hall in Dousman. Attendees were asked to complete a questionnaire to gauge interest in the options presented. The Department received 119 completed surveys with the majority of them (79) expressing a desire for Option 3. Many of the comments received



state they would rather preserve this area for wildlife and native habitat than see it developed. Of the comments opposing the project (6), safety with regard to hunting was the most cited concern.

In addition to the open house, Department staff has individually contacted neighboring landowners and local governmental officials who have provided positive feedback for the project.

## **ALTERNATIVES**

### **No action**

The Department could take no action. However, this could be considered a missed opportunity to preserve an area designated as a primary environmental corridor in a rapidly developing county.

### **Option 1**

Create the Paradise Valley Addition with a proposed boundary of 1,825 acres. This alternative is the minimum option being proposed. It focuses on core wetlands on the landscape for protection and restoration and includes a minimal amount of upland buffer. While it includes acreage around Beaver Dam Lake, it does not include acreage connecting the parcels to provide an environmental corridor effect.

### **Option 2**

Create the Paradise Valley Addition with a proposed boundary of 3,040 acres. This alternative includes the acreage of Option 1 and a large addition of upland buffer around Beaver Dam Lake. This option will protect and restore essential wetlands and upland habitat buffers, and offers the potential for watershed protection.

### **Option 3 – Preferred Alternative**

Create the Paradise Valley Addition with a proposed project boundary that includes 6,318 acres. The larger boundary functions as a focus area giving the Department authority to pursue the highest priority lands needed to meet the project goals. Within that boundary the Department will focus on a maximum acreage goal of 4,000 acres. Priority will be given to acquisitions that support habitat protection, ecological connectivity, and recreation opportunities, and meet established criteria.

## **PROJECT FEASIBILITY DETERMINATION**

Based on information presented in this document, Department staff believes the proposed Paradise Valley Habitat Unit of the KMSF-SU is feasible from the standpoint of legal authority, ecological soundness, public support and availability of funding. Department staff recommends the project proceed.

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## **APPENDIX**

Environmental Assessment Certification

Summary of Public Comments and Public Involvement Log

Maps:

- Proposed Project Boundary
- Primary Environmental Corridors
- Wisconsin's Priority Conservation Opportunity Areas - Southeast Glacial Plains Ecological Landscape