

OVERVIEW OF THE CONSERVANCY LANDS SYSTEM

DRAFT

SUMMARY OF THE CONSERVANCY LANDS SYSTEM

Middleton's conservancy lands system includes 835 acres of natural area. The conservancy system includes both conservancy lands and the trails within these lands.

Conservancy Lands are public lands managed for natural vegetation, habitat, water quality and passive recreation. Although conservancy lands vary in size, vegetative communities, landscape features, management priorities, and uses, most conservancies share some or all of the following characteristics:

- Unique plant communities, wildlife, and/or geology.
- Ecological function, such as protecting water quality or preserving wildlife habitat.
- Maintained as natural area and restored to native plant community.
- Provides opportunities for passive recreation, education, and volunteering.

Trails

Middleton contains over 27 miles of trails including shared-use bike/pedestrian, hiking (pedestrian only), mountain biking, and seasonal cross-country skiing trails. The trail system provides a network of trails including trail loops within conservancies and trail corridors connecting public open spaces across the city.

WHAT IS THE DIFFERENCE BETWEEN A PARK AND A CONSERVANCY?

Parks are public areas managed for active recreation such as sports and playground activities. Middleton considers active recreation as structured recreational activities requiring specialized parkland development and intensive maintenance, such as athletic fields (soccer, football, etc.), athletic courts (tennis, basketball, etc.), and swimming facilities. Parks tend to have facilities such as pavilions, shelters, playgrounds, bathrooms, and parking lots. Parks are addressed in Middleton's Comprehensive Parks and Open Space Plan (2014-2019). The City plans to develop a five-year update to the Comprehensive Parks and Open Space Plan in the later half of 2018.

This Plan is specific to Middleton's conservancy lands. Conservancy lands are managed primarily for conservation and outdoor recreation. Middleton's 27 miles of trails provide access into and around conservancies, and facilities are generally limited to benches and waysides. Conservancy lands not only provide ecosystem services, but also offer a range of recreational opportunities including hiking, biking, birdwatching, and cross-country skiing among others. Thus, the Plan primarily addresses natural area management, trails and trail maintenance within conservancy lands, and user experience related to outdoor recreation opportunities in conservancy lands.

ECONOMIC AND HEALTH IMPACTS OF PUBLIC LANDS

Economic Impact

Middleton's public lands (parks, conservancies and other open space) are a defining feature of the City. These areas are attractions to Middleton residents and visitors alike. Public lands impact local economies through direct spending, by attracting businesses, and increasing property values.

The [conservancy system] is one of the top reasons we live in Middleton - Survey respondent, 2018

In Wisconsin, local and regional park agencies contributed \$1.4 billion in economic activity and over 12,000 jobs in 2013³. Wisconsin's outdoor recreation industry contributed an additional \$17.9 billion, 168,000 direct jobs, and an additional \$1.1 billion in state and local tax revenue⁴. The outdoor recreation industry accounted for over 8% of employment in Dane County in 2008⁵.

The economic impact of public space including outdoor recreation and conservation is harder to discern. A study sponsored by the National Fish and Wildlife Foundation in 2011 estimated the economic value of all outdoor recreation, nature conservation, and historic preservation activities (excluding motorized activities), at \$1 trillion in the United States⁶.

Middleton's conservancy lands support both passive recreation and "non-standard active recreation." Passive recreation refers to recreational activities that do not require specialized parkland development or facilities, such as walking and birdwatching. Middleton additionally defines "non-standard active recreation" as activities that require some basic infrastructure, such as trail development, but lower maintenance needs than active recreation facilities, as defined in the Middleton Park and Open Space Plan 2014-2019. Activities include mountain biking, cross-country skiing, disc golf, and exercise/fitness trails.

Additional detail on Middleton's classification of parklands and definitions of recreation types is available in the 2014-2019 Comprehensive Parks and Open Space Plan.

LAND AND FACILITY INVENTORY

> 835 acres of conservancy land

> 27 miles of trails

3 National Recreation and Park Association. 2015. The Economic Impact of Local Parks: An Examination of the Economic Impacts of Operations and Capital Spending on The United States Economy. George Mason University, Fairfax, VA.

4 Outdoor Industry Association. 2017. Wisconsin Outdoor Recreation Economy Report. Accessed 2/20/2018 <https://outdoorindustry.org/resource/wisconsin-outdoor-recreation-economy-report/>

5 Dane County Parks. 2018. Draft Parks and Open Space Plan 2018-2023. Madison, WI

6 Southwick Associates. 2011. The Economics Associated with Outdoor Recreation, Natural Resources Conservation and Historic Preservation in the United States. Prepared for The National Fish and Wildlife Foundation. Fernandina Beach, FL

As of 2011, Wisconsin ranked 9th in the nation for wildlife-viewing related expenditures, at nearly \$1.5 billion in direct and indirect expenses related to wildlife viewing. These include trip related expenses, like food and lodging, equipment such as binoculars, cameras and birdhouses, and other items, such as landscaping designed to attract wildlife⁷.

Nationally, of the 86.0 million people who engaged in wildlife watching in 2016, 28% participated by taking trips away from home and 94% participated around their home. Away-from-home participants are defined as those who travel a mile or more from home to engage in wildlife watching, and around-the-home participants are those who engage in wildlife watching less than a mile from home.

On a local scale, public lands can have a positive effect on property values, and can lead to higher tax revenues for local governments. A synthesis of existing economic studies performed by the Active Living Research program in 2010 summarized that property values are greater for houses within 1,500 feet of an open space, and that this effect is greater for larger natural and forested areas compared to urban parks and playgrounds⁸. Open spaces areas in urban areas, such as Middleton, provide greater economic benefits to surrounding properties than open spaces in a rural setting.

Economic valuation of public lands greatly underestimates the inherent value of natural areas, by excluding the nonmarket values associated with passive uses and impacts on public health.

Health Benefits of Public Lands

Middleton's conservancy system and trail system provide spaces for a range of activities supporting physical and mental health. Many outdoor recreation activities are known to have physical health benefits (e.g. walking, biking, running, cross-country skiing, etc). Promoting physical activity through outdoor recreation is a priority topic in the 2011-2016 Wisconsin's Statewide Comprehensive Outdoor Recreation Plan. Additionally, the Wisconsin Department of Health Services listed increased local recreation facilities as an objective for increasing physical activity⁹.

Statewide, municipalities account for about 1% of public land ownership; however, urban lands, such as Middleton's parks and conservancies, serve a role in promoting public health for local residents. Walking is the most popular recreational activity in Middleton, and proximity to public lands and trails facilitates this type of exercise. In Dane County, over 50% of residents live within a ½ mile of a park or trail¹⁰. Dane County boasts the lowest rate of adult obesity in the state, with 24% of adults with a body mass index of 30 or higher¹¹.

Interestingly, a statewide analysis on the impact of parks on public health found that supply of parks, mileage of trails, and percent walking access were insignificant in explaining local public health and wellness outcomes when education, income, race, and age were ignored¹². This finding does not suggest that access to public lands and extent of public lands and trails is not related public health. However, serves as a reminder that health outcomes are related to other health determinants, such as socioeconomic factors, health care, health behaviors, and physical environment.

7 Caudill, James. 2014. Wildlife Watching in the U.S.: The Economic Impacts on National and State Economies in 2011. Addendum to the 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. Report 2011-2 US Fish and Wildlife Service. Washington, DC

8 Shoup, Lily and Ewing, Reid. 2010. 2010 Report: The Economic Benefits of Open Space, Recreation Facilities and Walkable Community Design. Acting Living Research, a program of the Robert Wood Johnson Foundation, with assistance from San Diego State University. San Diego, CA

9 United States, Department of Health and Human Services. 2011. State Indicator Report on Physical Activity, 2010 Wisconsin Activity Guide. US DHHS Centers for Disease Control and Prevention, Accessed at <https://www.cdc.gov/physicalactivity/downloads/pa_state_indicator_report_2010.pdf> 2/25/2018

10 Ibid.

11 University of Wisconsin Population Health Institute. County Health Rankings Key Findings 2017. Accessed at <<http://www.countyhealthrankings.org/content/dane-wisconsin>> 3/1/2018As

12 As reported in: Wisconsin, State of. 2011. Statewide Comprehensive Outdoor Recreation Plan 2011-2016. Wisconsin Department of Natural Resources, Bureau of Parks and Recreation. Madison, WI. Sourced from: Marcouiller DW, Prey J, and Outhavong A. 2011. Outdoor recreation for public health and wellness: A spatial county-level SCORP assessment for Wisconsin. Paper presented to the ISSRM Annual Conference, June 2011, Madison, WI; and Bernardinello M, Glott T, Maggied T, Outhavong A, and Vondra B. 2010. Outdoor Recreation, Health, and Wellness: Understanding Key Relationships – Final Workshop Report. Madison, WI: Department of Urban and Regional Planning, University of Wisconsin - Madison, Madison, WI

Middleton's conservancy system is unique in offering both physical recreation (e.g. walking, biking, etc.) and nature-based activities (e.g. birdwatching, wildlife viewing, reading interpretive signs, etc.). These activities each have varying levels of physical engagement, and individuals performing these activities can additionally moderate their engagement based on personal health and ability. Recreating in nature can have both physical and mental health benefits. A growing area of research shows the positive impact of spending time in nature on mental health. Some of the benefits of visiting green spaces include mood improvements, positive cognitive effects, lower stress and anxiety, lower levels of depression, increased physical activity, and increased social interaction¹³. The positive mental effects appear to be enhanced when spending time in nature is linked with physical activity¹⁴.

Although the positive impacts of spending time in green space/nature are well documented, little is known about the elements of the landscape that evoke positive mental health impacts nor the comparative health impacts of different types of open space (park v.s. conservancy). Anecdotally, Middleton conservancy users cite the "naturalness" and "natural beauty" of Middleton's conservancies as highlights of user experience.

Middleton conservancy users list "spending time in nature" and "exercise" as the top motivations for visiting conservancy lands, based on responses to the Conservancy Lands Plan Update Survey conducted as part of the plan process.

ECOLOGICAL LANDSCAPE

Topography

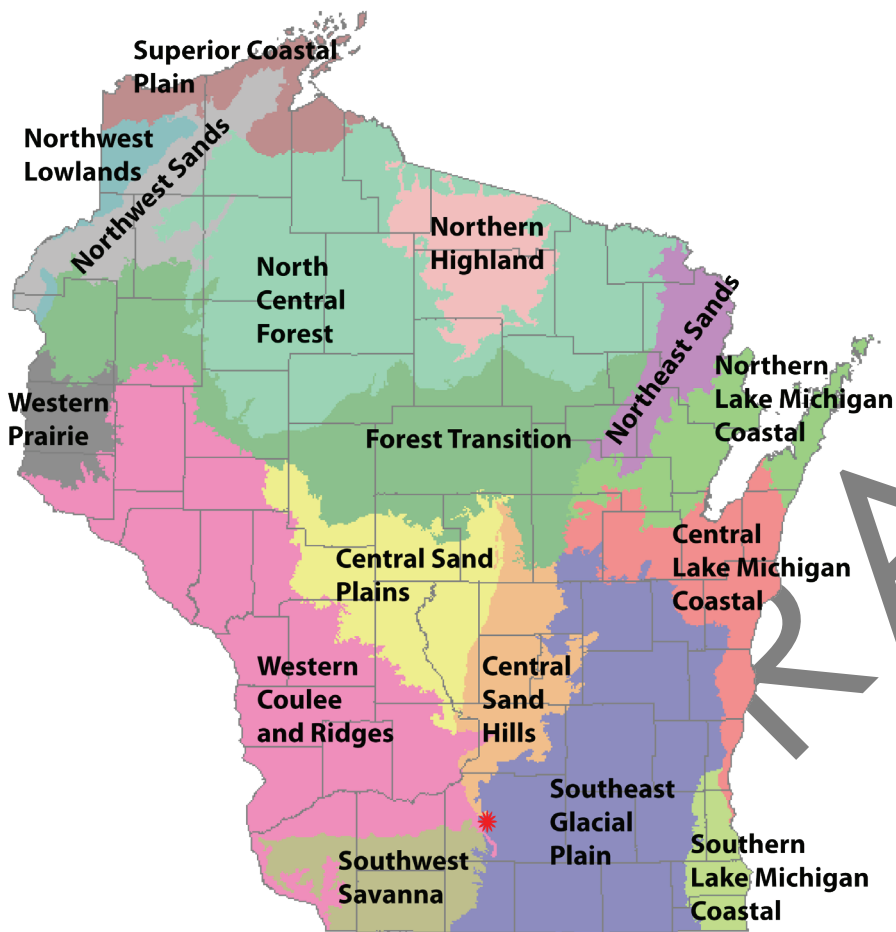
Middleton is located on the western edge of the Southeast Glacial Plain ecological landscape, a landscape characterized by glacial topography such as undulating moraines, kettles, drumlin fields and outwash plains¹⁵ (Figure 1-1).

When glaciers flowed southward during the last Ice Age, they picked up and transported enormous quantities of rock and soil. As the climate warmed and the glaciers retreated, this rock and soil was left behind. Hilltops, *moraines*, formed where rocks, soils and boulders were deposited. Depressions, or *kettles*, formed from ice melt where huge ice blocks were lodged into the ground by a receding glacier. Kettle depressions that eventually filled with glacial meltwater are called *kettle ponds*. Middleton has five kettle ponds.

¹³ Townsend M and Weerasuriya R. 2010. Beyond Blue to Green: The benefits of contact with nature for mental health and well-being. Faculty of Health, Medicine, Nursing and Behavioural Sciences, Deakin University, Geelong, Victoria, AU.

¹⁴ Keniger L, Gaston K, Irvine K, Fuller R. 2013. What are the Benefits of Interacting with Nature? International Journal of Environmental Research and Public Health. 2010(3):913-935. doi:10.3390/ijerph10030913.

¹⁵ Finley RW. 1976. Original vegetation cover of Wisconsin. Map (scale1:500,000) and accompanying text. North Central Forest Experiment Station, U.S. Department of Agriculture, Forest Service, St. Paul, Minnesota.



Hydrology

Middleton is in the Lake Mendota watershed, which is a sub-watershed of the Yahara River, which drains into the Upper Rock River. The Rock River is a tributary of the Mississippi River. Non-point source runoff, especially nutrient and sediment storm water runoff, is a major pollutant of these waterways. Excess nutrients create conditions that impair water quality and encourage blue-green algae blooms, which are a human health hazard.

Conservancy lands protect Middleton's water resources such as undisturbed wetlands, kettle ponds and creeks. Middleton is geographically bordered to the east by Lake Mendota, and the Pheasant Branch Creek and its tributaries flow into the Lake. The Pheasant Branch Creek, its source springs and seeps, and its tributaries (North Fork, South Fork) are protected by four conservancies: the Pheasant Branch Conservancy, the Pheasant Branch Creek Corridor, the North Fork of the Pheasant Branch Creek and the South Fork of the Pheasant Branch Creek. Middleton's five glacial kettle ponds are additionally protected as conservancy areas (Sticker Pond, Tiedeman Pond, Graber Pond, Esser Pond, and Middleton Hills Pond).

Figure 2-1. Wisconsin Ecological Landscapes. Middleton is located at the intersection of three ecological landscapes: Southeast Glacial Plain, Southwest Savanna, and Central Sand Hills. Data provided by the WDNR, 2014.

Vegetation

Historically, southern Wisconsin supported a mosaic of prairie, oak savanna, oak woodlands and wetlands. Today, less than 0.1% of original prairie and oak-dominated communities remain.

Middleton's conservancy system contains a variety of habitats and landscape features. Conservancy lands include areas of remnant and restored native plant communities, including prairie, sedge meadow, oak savanna and oak woodland.

HISTORY OF CONSERVANCY LANDS

A history of the conservancy lands system was detailed in the 2011-2016 Conservancy Lands Plan (Box 2-1)¹⁶.

¹⁶ Schreiber Anderson Associates. 2010. 2011-2016 Conservancy Lands Plan for the City of Middleton, Wisconsin.

BOX 2-1: THE HISTORY OF MIDDLETON'S CONSERVANCY SYSTEM

from the Schreiber Anderson Associates 2011-2016 Conservancy Lands Plan

The City of Middleton has a long history of preserving its significant environmental and natural resource areas. In the early 1960's, Walter Bauman, former mayor of Middleton, realized the value of the City's unique resources, especially the Pheasant Branch Watershed. He recognized the importance of this special natural area in the midst of the rapidly urbanizing Madison Metropolitan Area. He and others on the Public Lands, Recreation and Forestry Committee (PRFC) and the Water Resources Management Commission (WRMC) worked hard to provide for the protection and eventual acquisition of the Pheasant Branch Conservancy and the surrounding conservancy lands. A Conservancy Zoning District was created to provide legal protection to sensitive natural areas such as the Pheasant Branch Conservancy. This zoning designation also helped the City create and protect additional conservancy areas like Tiedeman Pond, Graber Pond, Esser Pond and Stricker Pond.

In 1966, the PRFC created Middleton's first Park and Open Space Plan, which identified the need to protect the Pheasant Branch Conservancy. The Lakeshore Problems Committee formed that year to address siltation problems in Lake Mendota. The committee quickly recognized the problems that development and farming practices were causing and created the Pheasant Branch Rehabilitation Master Plan in 1967, which included a variety of erosion protection and bank stabilization projections for the Pheasant Branch Creek and Conservancy Area.

In 1968, the Middleton Conservation Committee, a citizen group, also became active in work projects in the area. In 1969, 15 acres of wetlands were purchased for what later became the Pheasant Branch Nature Preserve (synonymous with Pheasant Branch Conservancy). Around this time, the PRFC increased its interest in nature preserves. In 1970, the Pheasant Branch Nature Preserve was created by a resolution of the PRFC and the Middleton Common Council. The 1972 Park and Open Space Plan described guidelines for Pheasant Branch Conservancy and recommended increasing its boundaries significantly. The PRFC recognized the need to preserve lowlands, natural waterways and wetlands in their natural state to ensure their maintenance as wildlife and fish habitats, natural drainage areas, and areas of passive outdoor recreation. The PRFC also recognized that citizens will respect and protect natural areas when they are made aware of their natural values.

The City of Middleton created the WRMC in the early 1970's to oversee the protection of the City's streams, lakefront, ponds and marshes. The committee was instrumental in creating the Pheasant Branch Marsh Environmental Study and Acquisition Plan in 1973 (updated in 1982); the plan outlined a strategy for preserving the Pheasant Branch Nature Preserve and with the assistance of local, state and federal funds, the first 100 acres of land in the marsh were acquired in 1975.

The Conservancy Lands Committee (CLC) has also been instrumental in protecting Middleton's important natural resources. The CLC began as an ad hoc committee in May of 1997, and was formally established by the Middleton City Council by ordinance in 1998 to further the City's interests in the management of its community forests, fields and wetlands for conservation purposes under state law. The CLC plans and implements programs designed to restore and develop such land so as to accomplish ecological restoration and natural scenic beauty as well as opportunities for education and recreation for the residents of the City. It also recommends to the Common Council adoption of ordinances to further the above goals, as well as to further the general health, safety and welfare of the public. Working closely with the City's Public Lands Manager in these efforts and under the general direction of the Middleton Common Council, the CLC advises the Council and City staff concerning environmental policy on conservancy lands in the community.

With the extensive planning and protection work of the 1960's and continuing today, the Pheasant Branch Conservancy and Middleton's other conservancy lands have been preserved for the benefit of all people, wildlife and the natural environment.

CONSERVANCY LANDS ZONING

Conservancy lands are designated as Conservancy District (CO). Permitted and conditional uses are defined in Middleton's City Code of Ordinances Sections 10.74-10.79. Regulations of conservancy lands are described in Middleton's City Code of Ordinances Section: 21.03 CONSERVANCY LANDS REGULATIONS.

The term "conservancy" or "conservancy lands," notwithstanding any designation of land pursuant to the City of Middleton zoning Code or designation of lands by any other authority, shall include only those public lands of the City of Middleton designated as conservancy on the official Park System Map on file in the offices of the City Clerk and Public Lands Manager as approved by the Common Council.

