Park & Open Space Proposal:
North McGaw Park Neighborhood

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Fitchburg Parks, Recreation & Forestry Department

The North McGaw Park Neighborhood has been designated by Fitchburg city planners as an area for near future development. While development might be inevitable, there are concerns for the quality and permanence of existing resources, as well as the City's capacity to meet the diverse recreational needs of its increasing population. Responding to this concern provides an opportunity for conservation and recreation through the education and implementation of Fitchburg's Park & Open Space Proposal. The Proposal, first drafted in 2007, is simply a tool to identify sensitive areas within the proposed neighborhood that are worth considering for further evaluation as park and protected open space.

The proposed 545-acre North McGaw Park Neighborhood, bordered by Swan Creek to the east and the urban service area to the north and west, has various natural and cultural resources. There is also a notable open space character to this area. Therefore, the North McGaw Park Neighborhood has ample locations that are worth maintaining as park and open space. This report discusses each resource that was analyzed, the source and mapping of the resource data, as well as the method for linking resources through a park and open space network. Within each resource section are bulleted items that summarize the resource as it relates specifically to the North McGaw Park Neighborhood.

Water Resources

Water resources include wetlands, streams, drainageways, groundwater recharge, open water, and springs.

- The entire neighborhood study area falls within the Yahara River/Lake Monona watershed. This watershed also includes Lake Waubesa. While water quality of the lake has improved since 1926, "the lake still receives large nutrient loads primarily from upstream" (Fitchburg Planning Dept., 2008).

Wetlands

A wetland is defined as "an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions." According to the Wisconsin DNR, "Wisconsin has lost about half its wetlands in the last two centuries" (2008). The wetlands dataset originated from the WDNR. It incorporates revisions to wetland boundaries which typically come from surveyed lands. The primary source of wetlands data is the Wisconsin Wetlands Inventory, initially completed using 1986 air photography. Wetlands were delineated from the analysis of high altitude imagery in conjunction with soil surveys, topographic maps, previous wetland inventories and field work (WDNR, 2008).

The Park & Open Space Proposal includes not only the delineated wetlands, but a 300-foot wetland buffer. This is the setback distance that will be established in Fitchburg's Comprehensive Plan. 300-foot buffers are also used for all streams/waterways. "The [Army] Corps of Engineers

recommends a minimum riparian buffer width of 300 ft. for avian populations and points out that the wider the buffer, the more protective of ecological functions" (Delaware River Keeper, 2006).

In an article published in the October 2003 issue of *Conservation Biology*, Raymond Semlitsch, a professor of Biological Sciences, provides an estimate of the geographic size of core habitats surrounding wetlands and streams. From a policy perspective, the research extends the traditionally accepted boundaries of amphibian and reptile habitats near wetlands and streams, but Semlitsch argues that the research isn't meant to determine policy.

Semlitsch's work provides a clear delineation of the boundaries of wetlands buffers. In studying the breeding and nesting patterns of turtles, snakes, frogs and salamanders, Semlitsch found that the core habitat of these reptiles and amphibians reached 943 feet from a wetland or stream boundary. Semlitsch also identified a terrestrial buffer zone, which is an upland and, under normal conditions, dry area that extends another 163 feet from the edge of the core habitat. The core habitat is critically important to the animals' life cycle, and it is recommended that the area remain protected (Semlitsch & J.R. Bodie, 2003).

The few ordinances and regulations currently enacted by state or local governments are designed to protect only water resources from sedimentation and chemical runoff. From a biological perspective, Semlitsch emphasizes that water resources cannot be protected without protecting the entire ecosystem, which includes not only water but the land where plants and animals live. In other words, the health of a wetland or stream depends on the health and biodiversity of the entire ecosystem (Semlitsch & J.R. Bodie, 2003).

"We need to think more broadly of what an ecosystem is," says Semlitsch. "If you're protecting only water quality, you're not really protecting the ecosystem" (Semlitsch & J.R. Bodie, 2003).

Refer to the Planning/Zoning Department's *Riparian Buffers* document for additional research on buffer widths.

- There are 28 acres of delineated wetlands in the North McGaw Park Neighborhood. These are limited to the area west of Syene Road that is adjacent to Swan Creek. These wetlands are classified as emergent/wet meadow and scrub/shrub (woody plants less that 20ft tall). However, the current quality and size of these wetlands is unknown at this time.

Waterways, Open Water Bodies and Springs

Hydrography data was obtained from Dane County and is based on interpretations from 1990 aerial photography. Waterways are delineated as channels, perennial streams, or intermittent streams. While the City's Comprehensive Plan will only require 75-foot setbacks for streams/drainageways, 300-foot riparian buffers are delineated in the Park & Open Space Proposal for preservation consideration. Research indicates that the larger the buffer strip, "the greater the potential for providing for more ecological functions" (Fischer, 2001).

- Swan Creek, a stream that feeds the basin of Lake Waubesa, is a dominant water feature within the North McGaw Park Neighborhood. "Swan Creek is rated high on the 1990—2003 stream water assessment" (Fitchburg Planning Dept., 2008). One intermittent segment of the creek serves as the western neighborhood boundary. Another intermittent headwater of Swan Creek starts south of Quarry Hill Park in the Fitchburg Technology Campus.

- There exists one stormwater basin on Fitchburg property that is adjacent to Quarry Hill Park.
- There are no known springs within the study area, but the existence of a spring approximately 325 feet to the south of the neighborhood's southeast corner should be noted.

Groundwater Recharge

Groundwater is a very important resource for the City as it provides drinking water and base flow to the region's streams, lakes, and wetlands. All of Dane County's drinking water comes from groundwater which originates as recharge. Therefore, the protection of this resource is critical to the City's ability to function sustainably. The level of development within the City will most likely affect the groundwater levels of the City (Fitchburg Planning Dept., 2008). Municipal water use and impervious surfaces causes significant lowering of water levels (Bradbury, 2006). Some soils have a greater potential for groundwater recharge while impervious surfaces have no opportunity for recharge.

Infiltration data, produced by the Community Analysis and Planning Division of the Dane County Planning Department (CAPD) in 2006, shows the highest rated areas for natural infiltration potential (top 25%). Data was "derived from NRCS soil information using relative cumulative scores based on a variety of factors such as soil permeability, depth to water table, depth to bedrock and slope" (Fitchburg Planning Dept., 2008).

- Groundwater flow throughout most of Fitchburg, including North McGaw study area, moves northeast, feeding the streams and wetlands of the Yahara River Basin (Fitchburg Planning Dept., 2008).

- Based on the data for natural infiltration opportunities, the neighborhood has a significant amount of groundwater recharge potential, especially in the western half. All areas have a natural infiltration rating of 7.5 or 8 (out of 10).

Hydric Soils/Possible Hydric Inclusions

According to the Natural Resources Conservation Service, a hydric soil is one "that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part…Soils in which the hydrology has been artificially modified is hydric if the soil, in an unaltered state, was hydric." Hydric soils play a major role in the identification of wetlands. Areas that meet hydric soil criteria, as well as hydrophytic vegetation and wetland hydrology criteria, are classified as wetlands (2008).

Dane County developed a hydric soil list using the National Hydric Soils Criteria. The list also includes possible hydric inclusions which are non-hydric but likely to contain hydric components. "The hydric list is updated whenever additional hydric components or inclusions are identified by field investigations, or there are changes in the National Hydric Soils Criteria" (Dane County, 2006).

- Hydric soils are only present west of Syene Road. They are located in the wetland area and extend outside the study area to Irish lane.
- While most possible hydric inclusions are located in the western half of the study area, there are also three units found in the northwest corner.

Vegetation (Forest Resources)

With the exception of wetlands, mapped vegetation data is limited to forest resources and includes forested areas, fencerows (tree lines), heritage oak trees, and potential specimen trees. Data was delineated using the most recent air photos and field investigation.

Heritage Oak Inventory

"In 1976, as part of the state celebration of the American Revolution Bicentennial, a survey was conducted to locate oaks within an eight mile radius of the state capitol that were at least 200 years old. Walter Scott, former assistant to the secretary of the State Department of Natural Resources, conducted the survey. Walter was very familiar with heritage trees, having maintained the records of big trees in the state since 1941" (Bruce Alison, Dane County Tree Board, 2006). It should be noted that the 1976 survey does not include the entire area of Fitchburg. The south and southwest portions of the City fall outside the 8-mile radius.

The Parks, Recreation & Forestry Department has identified many of the trees in Scott's survey, plus additional trees that now meet the diameter criteria. White and bur oaks need a diameter of at least 38 inches (10-ft circumference) and pin, black, and red oaks need at least a 42-inch diameter (11-ft circumference) (Bruce Alison, Dane County Tree Board, 2006). The inventory is not complete to date. Most heritage oak trees are on private property and therefore, require landowner permission to be surveyed. Fitchburg residents have been asked to contact the Department with information on potential heritage oaks.

- There are 5 heritage oaks known to be within the North McGaw Park Neighborhood. Two bur and one white oak are located in S. Johnson Park. The largest has a 56.2-inch diameter and is estimated to be over 275 years. On Syene Road, less than a half mile south of Wildheather Drive, is a red oak that is about 200-years old. The fifth heritage oak is a bur oak (~230 years) that can be found at the south end of Curly Oaks Lane. The trees need to be assessed for their existing conditions.

Potential Oak Savanna Remnants

The presence of heritage oak trees, especially bur oaks, often indicates that an area was once an oak savanna. Prior to settlement and the advent of agriculture, oak savanna was the predominant habitat in southern Wisconsin. Bur oaks dominated savannas with their ability to tolerate fire.

- After an initial assessment, Natural Resources Consulting has identified the very western area of North McGaw Park Neighborhood as a likely oak savanna remnant due to the presence of large oak trees (J. Kraemer, personal communication, June 19, 2008).

Forest

Forest data includes a woodlands dataset that was created by the County. Woodlands were delineated based on interpretations from 1990 aerial photography. Additional forested areas were mapped by the Parks, Recreation & Forestry Department using a 2007 air photo.

- While there are woodlots dispersed throughout the neighborhood, the majority of forest areas fall in and around McGaw and S. Johnson Park.

Vegetation Corridors (Tree Lines, Fencerows)

After further investigation, vegetated corridor data for the North McGaw Park Neighborhood was mapped by the Department after the initial drafting of the Park & Open Space Proposal boundaries. These vegetated corridors have also been referred to as fencerows or tree lines. The data was

produced using a 2007 color air photo and field observation. These corridors are tree lines that typically separate agricultural fields or parcels. There is research that argues their ecological significance, since, depending on their size and biological significance, they can function as habitat and migratory corridors for a variety of species (Bakermans & Rodewald, 2002; Forman & Baudry, 1984; Davies & Pullin, 2007).

Vegetation corridors can also serve as aesthetic resources. The tall trees can provide contrasting scenery from other land uses, like residential lots. In addition, they can serve to obstruct views of other buildings and therefore create a sense of privacy.

- The North McGaw Park Neighborhood has a number of vegetation corridors that run throughout its extent. The longest corridor runs east-west through the central portion of the study area. It creates the southern boundary to McGaw Park. There are also quite a few north-south oriented corridors. The composition and quality of trees and habitat that make up these corridors requires further assessment.

Potential Specimen Trees

A specimen tree is considered any living tree that displays superior quality and characteristics when compared to trees of the same species or other trees in the vicinity of the woodlot. A specimen tree can be dominant or codominant in the canopy, should have a DBH of greater than or equal to 15 inches, and display good health. A specimen tree can also be a tree with exceptional aesthetic quality. Therefore, potential specimen trees are those identified as likely specimen trees in an initial field observation without further assessment (trees are observed from a distance).

- Based on an observation of the neighborhood's western vegetated and sloped area (made looking south from the end of Research Park Drive), five potential specimen trees were identified. Four are large oaks. Two of those oaks are found in the fencerows that border the neighborhood. The fifth is a mature basswood, believed to be a Linden, which sits at the north end of the interior fencerow. There are many other trees in the vicinity that were too far away to identify. Further study of this area and other mature field trees within the neighborhood is recommended.

Steep Slopes

Steep slopes are those with a slope of 12% and greater. Slopes data was obtained from the Capital Area Regional Planning Commission, and is based on a 2005 digital elevation model. Slopes of 12% and greater are significant as they are used as criteria by the Dane County Regional Planning Commission (DCRPC) and other commissions to define environmental corridors. Steep wooded slopes minimize erosion and provide wildlife habitat (Community Analysis and Planning Division, 1997). Building on steep slopes can be problematic and costly, especially near water resources.

- The North McGaw Park Neighborhood has relatively few steep slopes for its area. However, there are concentrations of steep slopes throughout, especially in the areas surrounding Syene Road. Yet, the more critical areas, ones with more continuous steep slopes, include the moraine edge in the southwest corner, the forested ridge in the southeast corner, and the private woodlot to the east of McGaw Park.

Environmental Corridors

Generally speaking, "environmental corridors encompass linear landscape features containing concentrations of natural and cultural resource amenities." Phil Lewis, Jr., UW-Madison professor emeritus, brought attention to the term starting in the 1960s. The planning community has expanded its definition to meet government requirements (Murrell, 2003).

The environmental corridor dataset for Dane County follows wetland buffers, floodplain boundaries and natural resource protection areas. They are delineated based on available information and the following criteria (Murrel, 2003):

1. All waterways and water bodies, including lakes, ponds, intermittent and perennial streams, and drainage ways.
2. Vegetated buffer strips along drainage ways, streams, lakes, and wetlands.
3. 100-year floodplains.
4. Mapped wetlands (taken from the DNR's Wisconsin Wetland Inventory).
5. Steep slopes (those 12% or greater).
6. Woodlands.
7. Existing and proposed parks, greenways, conservancy areas, and storm water management areas.
8. Areas of unique vegetation or geology.

- There are four areas within the neighborhood that are designated as environmental corridors:
  1. McGaw and S. Johnson Parks
  2. The Swan Creek corridor running through the Rueden property
  3. The Swan Creek wetlands area at the neighborhood's western boundary
  4. The forest ridge and possible hydric inclusion (southeast corner)

Public Land

Public land includes all parcels of land owned by a governmental body. They may be used for park and open space or have facilities that provide services for residents (i.e. police/fire stations, stormwater management, wells). The Fitchburg Parks, Recreation & Forestry Department has included all the City, County, State, and Federal parcels in the Park & Open Space Proposal. Existing City parks and open space have been excluded from the Proposal boundaries as they already are considered park and open space.

- All public lands within the study area are held by the City. They include a stormwater management area, two parks, and the right of way (symbolized in white).
- A recreational trail is proposed for the abandoned railroad corridor which makes up the Syene Road right of way. This small segment would be apart of what has been proposed as the Heritage Circle Route.

Productive Soils

According to the Wisconsin State Journal (2008), "Wisconsin has been losing its cropland to other uses faster than any other state in the Midwest." Productive soils data was obtained by the Capital Area Regional Planning Commission and is based on the rating of the best soils for agriculture (agricultural soil groups I and II). Silt loams tend to be prime agricultural soils. Additionally, they are suitable for development, having no more than 2-6% slopes (Fitchburg Planning Dept., 2008).

Group	Rating
I	**93 – 100**
II	**85 – 92**
III	74 – 84
IV	64 – 73
V	54 – 63
VI	40 – 53
VII	21 – 39
VIII	0 – 20
Source: Dane County and NRCS, 2003.	

- The majority of the study area has highly productive silt loam soils. The primary silt loams are Plano (PnB) and Ringwood (RnB), but there are also occurrences of other silt loams such as Dodge (DnB) and St. Charles (ScB).

Natural Heritage Inventory (NHI)

Wisconsin's Natural Heritage Inventory program is run by the Wisconsin Department of Natural Resources (WDNR). "NHI programs focus on locating and documenting occurrences of rare species and natural communities, including state and federal endangered and threatened species." Because NHI data are exempt from Wisconsin's Open Records Law due to the vulnerability of rare species to collection and destruction, their locations are generalized for public use (WDNR, 2005).

There are 18 NHI plant and natural community occurrences recorded for Fitchburg. The dates of last observation range from 1880 to 1999. Natural communities include the following: shrub-carr, southern sedge meadow, emergent marsh, shallow lake, warm stream, and wet mesic prairie. Plant occurrences include prairie false-dandelion, Wilcox panic grass, Hall's bulrush, Engelmann spike-rush, Adder's tongue, pale-purple coneflower, Flodman thistle, prairie white-fringed orchid, yellow giant hyssop, slim-stem small reedgrass, small white lady's slipper, and yellow gentian (WDNR, 2007). Since the current status of these endangered and threatened species is unknown, a DNR review is needed to determine if the habitat still exists on site.

- The presence of a threatened plant specie within the North McGaw Park Neighborhood is a possibility, as the occurrence of the plant has recently been found near the proposed neighborhood.

Cultural Resources

According to the Fitchburg Landmarks Preservation Commission, "The area of Fitchburg was one of the earliest areas of Wisconsin to be settled." John Stoner began farming in Fitchburg in 1937, but the Vroman brothers are considered the first permanent settlers. Agriculture played a major role as the area was settled by many Irish and Germans. Oak Hall, a settlement area at the intersection of County M and Fish Hatchery, was the first center of Fitchburg government. Several other settlement areas grew as a result of early stagecoach routes and railroad stops. Many remnants of Fitchburg's settlement history still remain (1999).

Indian Trails/Camps/Mounds

There has been documentation that the Ho-Chunk, formerly the Winnebago Indians, predominated in southern Wisconsin, including the area of Fitchburg, even during the period of European settlement. They camped near water and hunted and fished for several months before moving to a new location. They traditionally located themselves along Lake Barney and on the mound above Nine Springs (Fitchburg Bicentennial Committee, 1976). Charles Brown, former Museum Director of the Wisconsin Historical Society, documented the locations of numerous Indian trails, camps, and mounds throughout the State. An atlas of known archaeological sites and trails was completed using his findings and township plat maps. It is unknown whether any remnants of the trails, camps, or mounds within the City still remain.

- There are no Indian archeological sites identified within the study area.

Historic Buildings/Sites and Schoolhouses

Features designated as historic buildings/sites are recognized as local and state landmarks. They include places identified by the Fitchburg Landmarks Preservation Committee, such as farmsteads, schoolhouses, homes, and agricultural buildings. Some of these places and others are also listed in Wisconsin's Architecture and History Inventory (AHI). "The AHI contains data on buildings, structures and objects that illustrate Wisconsin's unique history. The AHI documents a wide range of historic properties such as the round barns, log houses, metal truss bridges, small town commercial buildings, and Queen Anne houses that create Wisconsin's distinct cultural landscape. It is a permanent record maintained by the Wisconsin Historical Society" (Wisconsin Historical Society, 2008).

- The current Rueden property (5329 Lacy Road) is locally designated as a historic site. It includes the house built by Alfred Bitney some time between 1880 and 1910 and the land originally homesteaded by the Waldron Family (1873).
- While there are no historic schoolhouses within the study area, the Syene Schoolhouse still remains just across the neighborhood's north boundary (the intersection of Syene Road and Lacy Road). The building now functions as a private home.

National Register of Historic Places

The City has five sites on the Register. They include Fox Hall, the McCoy Farm House, the Nicholas Haight Farmstead (Spooner's Swan Creek Farm), the Wisconsin Industrial School for Girls (Oakhill Correctional Institute), and the John Mann Farmstead (Fitchburg Landmarks Preservation Commission, 1999).

- There are no sites named to the Register within the North McGaw Park Neighborhood.

Railroad Corridors

There are three rail corridors that are present in Fitchburg. All three have not been active for some time. Two corridors run north-south in both the east and west sides of Fitchburg. One runs along Seminole Highway and the other abuts part of Syene Road. The City owns a majority of the western corridor that falls within in Fitchburg. Portions of the third corridor, which is in the urban service area, are currently used as a recreational trail. Since all corridors are identified in the Park & Open Space Proposal as either existing or proposed recreational trails, they are displayed as trails rather than railroad corridors. Refer to the Cultural/Historical Resources map for the railroad corridor symbology.

- The Syene Road right of way that falls within the neighborhood boundaries also includes the railroad corridor. This entire segment is Fitchburg property.

Scenic Resource Inventory

For the purpose of seeking public involvement in park and open space planning, the Parks, Recreation & Forestry Department has given Fitchburg residents the opportunity to identify places of high scenic quality. In addition to photographing scenic places, participants were asked to respond to questions about what features led them to choose the location and the land management

priorities they would suggest. Unfortunately, few participated, resulting in only eight scenic resources.

- Two of those resources were identified within the North McGaw Park Neighborhood. One is a stand of large oak trees in the wooded area east of McGaw Park. The participant measured the trees to range from 25 to 37 inches in diameter and would like to see the area managed for passive recreation or natural area preservation. The second scenic resource is an active farm field to the west of McGaw Park that was chosen for its view of the Capitol building. The participant suggests that there should be higher priority given for managing this location for scenic beauty or active recreation, since development would obstruct the view of the Capitol.

Scenic resources within the proposed North McGaw Park Neighborhood.

Park & Open Space Methodology

The Park & Open Space Proposal was drafted using a resource-based model. In other words, all available natural and cultural resources data was collected and overlayed on one map to determine areas most sensitive to development. The boundaries of the proposed park and open space were drafted based on a composite of these resources and the following criteria:

- Exclusion of
  - The majority of the urban service area
  - Most private structures
- Inclusion of
  - Moraine Edge Park and Preserve (formerly Moraine Edge Park)
  - Most water features, wetlands, and their 300-ft buffers
  - Most woodlands
  - County, State, and Federal public lands
  - All Dane County environmental corridors
  - Areas with multiple resources
  - Areas with a single resource that link and/or lie adjacent to areas that meet the above criteria
  - Non-resource areas that can serve as wildlife, plant, or recreational corridors

*It should be noted that the original Park & Open Space Proposal boundaries were drafted prior to the mapping of the vegetated corridors (tree lines) and potential specimen trees. Therefore, we recommend that these resources be considered and further evaluated for addition to the Park & Open Space Proposal. This includes the sloped and wooded area in the west and the area adjacent to the Swan Creek headwater.

Park & Open Space Corridors

Instead of having a network of isolated areas of park and open space, we used corridors to link higher priority resource areas. Corridors were drawn to include as much of any known natural/ cultural resource as possible. This design allows for a park and open space network with a much greater ecological function. By linking areas of higher natural resource concentration, there is potential for these links to serve as corridors for wildlife and plant movement. This is important because the impact of global warming could affect the distribution range of various plants and animals. Creating park and open space corridors also can benefit its human users. Corridors provide an opportunity for the use of recreational trails which have numerous benefits, such as health, education and alternative transportation.

- The Park & Open Space boundaries within the North McGaw Neighborhood were designed with a couple priorities in mind.
  - The Parks Commission recommends the west and south expansion of McGaw Park for the purpose of accommodating additional active recreational facilities.
  - The Parks Commission has also deemed the east-west linear Moraine Edge Park and Preserve another priority for land acquisition. While the majority of this proposed park and open space runs south of the North McGaw Park Neighborhood, it does include the southeast environmental corridor within the neighborhood.
  - Three north-south corridors are designed to provide multiple access points to the Moraine Edge Park and Preserve. These corridors could serve the future residents of the North McGaw Park Neighborhood and McGaw Park users. However, the current locations of these corridors should be reviewed for the possible inclusion of vegetation corridors.
  - The concept of the abandoned railroad corridor along Syene Road being used as a recreational trail has been discussed among numerous City staff. This small segment would be apart of what has been proposed as the Heritage Circle Route. A path along County M could potentially connect recreational trails in both railroad corridors. However, there are concerns about the potential use of the east corridor for both rail and recreation.

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