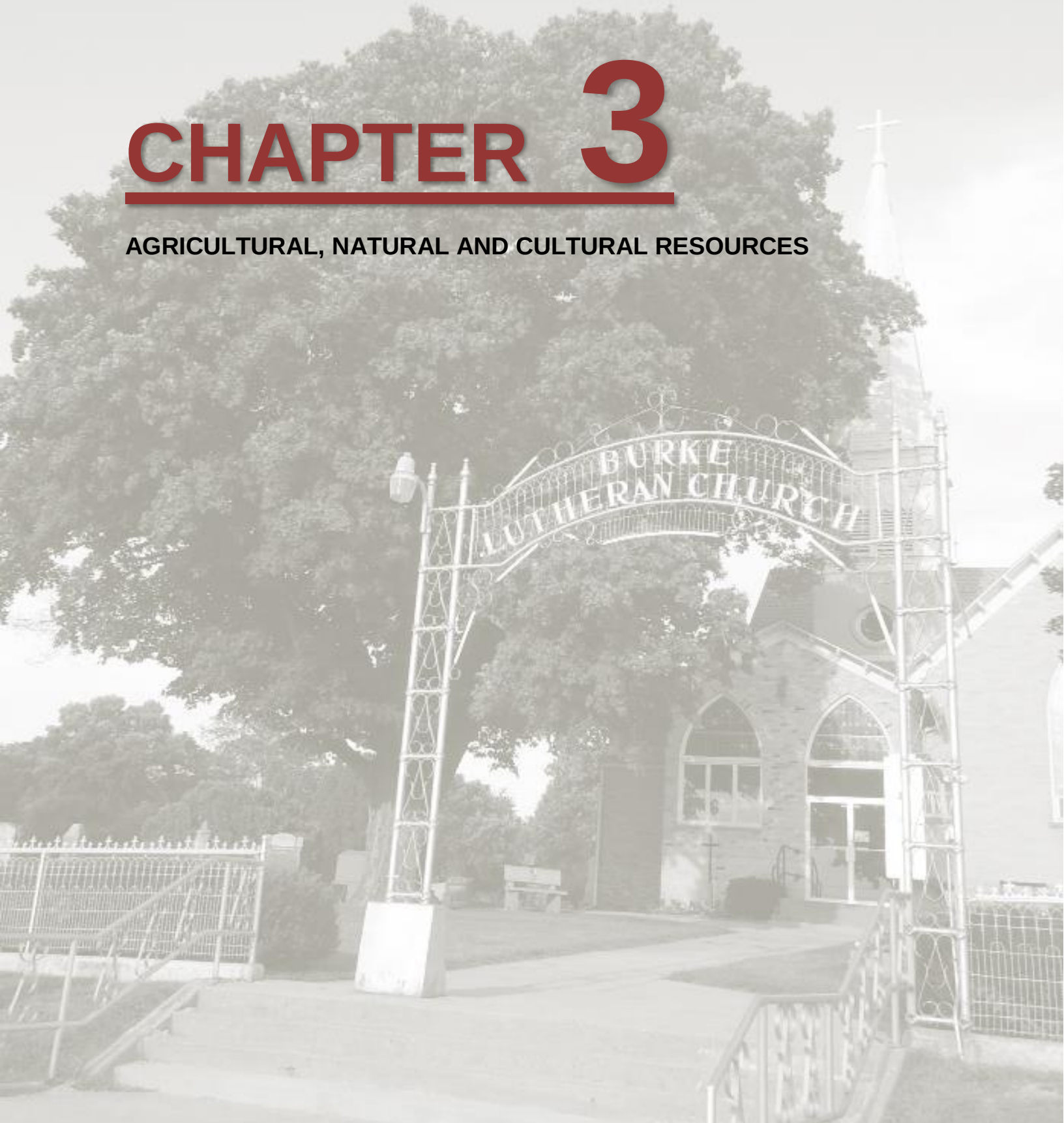
CHAPTER 3

AGRICULTURAL, NATURAL AND CULTURAL RESOURCES



AGRICULTURAL, NATURAL, & CULTURAL RESOURCES

This chapter contains a compilation of goals, objectives, policies, programs, maps, and recommendations for the conservation, and promotion of the effective management, of natural and cultural resources. These resources include productive agricultural areas, metallic and nonmetallic mineral resources, groundwater, forests, environmentally sensitive areas, threatened and endangered species, stream corridors, surface water, floodplains, wetlands, wildlife habitat, parks, open spaces, historical and cultural resources, community design, recreational resources, and other natural resources.

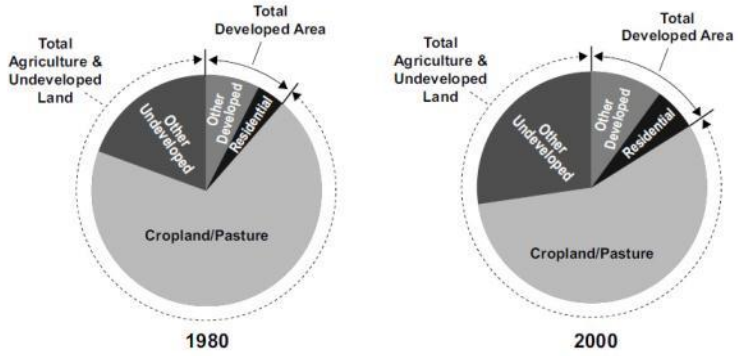
AGRICULTURAL RESOURCES

The following is an overview of the character, location, and viability of farming activity in the Town of Burke. Since there is a large amount of agricultural land within the community as it exists today, there are important influences on economic and development policies associated with that land that will affect the future of the Town and land owners within and surrounding the Town.

Character of Farming

In 2010 the Capital Area Regional Planning Commission published a report entitled *Farmland Loss in Dane County,* which examined the conversion trends of crop and pasture lands to developed land uses between 1980 and 2000. According to the report, between 1980 and 2000 approximately 95,500 acres of crop and pasture land was converted to other land uses, including 37,000 acres to development across cities, villages, and towns in Dane County combined. Figure 1 shows what this change looks like.

FIGURE 1: AGRICULTURE AND DEVELOPED LAND, LAND USE CHANGES IN DANE COUNTY, 1980 – 2000



Source: Capital Area Regional Planning Commission, *Farmland Loss in Dane County, January 2010*

When this data is explored further, it shows that villages have had an overall gain of 885 acres while cities and towns have both lost crop and pasture land. In fact, approximately 94,500 of the 95,000 acres of crop and pasture land lost in the 20-year period is attributed to towns alone. While some of that change is likely attributed to re-categorization of large areas of pasture into the other open space land use

categories in 2000[13], the loss of land for agriculture purposes is still substantial. Based on the past population and development trends, the report also predicts that roughly 42,450 additional acres are needed to accommodate anticipated population growth between 2000 and 2030.

According to the Capital Area RPC's 2010 report Farmland Loss in Dane County, half of Dane County towns with prime soils are located where growth pressure is the greatest, including the towns of Bristol, Burke, Middleton, Westport, and Windsor.

The Town of Burke contains lands that are cropped, but a vast majority, over 75 percent, of the cropped lands (as defined by Dane County) is not farmed in the traditional sense of the word. Rather, the majority of this land that raises a crop is cropped by people other than the owner. It is probable that the owner is holding the land for development. Absentee owners have not been known to "hold" land for farmland preservation. The 1999 Land Use Plan infers that there are only four "farms" located in the Town, which are not adjacent to one another.

Assessment of Farmland Viability

Just as important as understanding the character and location of farmland is understanding the physical characteristics, or viability, of the land. The Natural Resource Conservation Service ranks soil suitability for different uses into eight capability classes, with Class I soils considered prime farmland and Class VIII soils being useful for recreational purposes or natural habitat areas. The classifications are based on the soils capability to produce cultivated crops and pasture plants without deteriorating over a long period of time. Map 5: Soils shows the composition of soils within the Town.

Class I soils have slight limitations that limit their use and are prime soils for agricultural production. Class II soils have moderate limitations that reduce the choice of plants or require moderate conservation practices. Class III soils have severe limitations that reduce the choice of plants or require special conservation practices, or both. Class IV – Class VIII soils have very severe limitations that limit their agricultural use to mainly pasture, range, or grazing. Land use in these areas commonly consists of little crop production and more forestland, wildlife, and recreation area with a high esthetic value.

Generally, Class I soils are located in small isolated groups throughout the Town. Class I soils comprise a relatively small percentage of the total land area. Class II soils are located throughout the Town and make up the largest percentage of total land area. There is a massive area of Class III soil located in the western area of the Town, adjacent to the Cherokee Marsh and Token Creek areas. Class III soils are found throughout the Town, make up the largest percentage of soils within the Town, and tend to be more contiguous.

[13] The total estimated gain in open lands from 1990 to 2000 was 32,900. *Farmland Loss in Dane County*

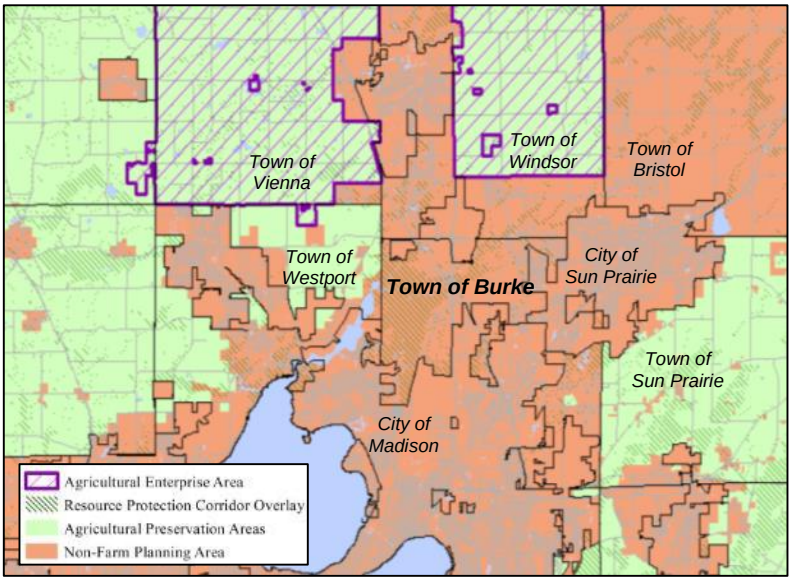
Map 5: Soils

State and County Farmland Preservation Efforts

The Working Lands Initiative, a Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) initiative signed into law in 2009 (Chapter 91, Wisconsin Statutes), is comprised of the Farmland Preservation Plan, the Agricultural Enterprise Area (AEA) Program, and the Purchase of Agricultural Conservation Easement (PACE) Program. Through these programs, the initiative strives to address the rapidly increasing loss of forest and farms, often in a fragmented fashion, that increases urban-rural conflicts, and deprives Wisconsin of the land base and infrastructure necessary for agricultural development and profitability.[14]

Image courtesy *Wisconsin Working Lands Initiative*

In 2012 Dane County updated its Farmland Preservation Plan (FPP) in accordance with the recommendations of the Working Lands Initiative. The FPP, certified by the DATCP, provides a basis for farmland preservation in Dane County and allows farmers to be eligible for state benefits and tax credits as long as they agree to keep their land in agricultural use. The image at right shows the areas and municipalities actively engaged in farmland preservation. The Town of Burke is part of the Non-Farm Planning Area, which includes areas adopted as part of the Dane County Comprehensive Plan that are not planned for long-term agricultural use.[15] The Non-Farm Planning Areas include areas with insufficient regulatory or other policy mechanisms in place to effectively limit nonfarm development over the next 20 years. The entire Town of Burke, save for a small parcel just south of the existing town hall, is susceptible to development and not included in the farmland preservation plan at the County level. Similarly, the future areas of the Town to be incorporated into the Village of DeForest and cities of Sun Prairie and Madison are not planned for future agricultural uses.



Source: *Dane County Farmland Preservation Plan, 2012*

[14] Department of Agriculture, Trade, and Consumer Protection, *Wisconsin Working Lands Initiative*, 2006

[15] Dane County *Farmland Preservation Plan*, 2012

The Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) reauthorized several federal agricultural subsidy programs originally part of the 2002 Farm Bill, including:

- The Conservation Reserve Program (CRP), which provides financial and technical assistance to farmers for the purposes of addressing soil erosion, water and natural resource concerns on their lands.

- The Wetland Reserve Program, which offers landowners financial and technical support for the purposes of protecting, restoring, and enhancing wetlands on their lands.

- The Wildlife Habitat Incentives Program, which provides farmers financial and technical assistance to develop habitat for wetland and upland wildlife, threatened and endangered species, fish and other wildlife on their lands.

- The Grazing Lands Conservation Initiative, which provides technical assistance to land owners for the purposes of improving grazing lands and developing grazing, seeding, fencing, and watering plans.

- The Environmental Quality Incentives Program (EQIP), which provides financial and technical assistance for farmers for the purposes of promoting agricultural production and environmental quality and optimizing environmental benefits.

In addition, the Wisconsin Department of Revenue offers two important farmland preservation programs: the Farmland Preservation Credit Program and the Farmland Tax Relief Credit Program. The purpose of the two programs is to help preserve farmland through local planning and zoning, and to provide tax credits to participating landowners.

As previously noted, almost the entire Town of Burke is in the Non-Farm Planning Area of the Farmland Preservation Plan and therefore does not currently qualify for these programs through the Wisconsin Department of Revenue. Furthermore, the future land use associated with the ETJ areas of the Village of DeForest and City of Sun Prairie do not call for agriculture related land uses in their long-range plans.

AGRICULTURAL RESOURCE GOALS, OBJECTIVES, AND POLICIES

Goal:

Preserve and redevelop farmland and agriculture related areas as open space to preserve the exurban character and natural beauty of the Town.

Objectives:

1. The Town does not intend to seek exclusive agriculture zoning as a means to preserve farmland.
2. Recognize the eventual transition of farmland to urban usage.
3. Encourage more compact development in areas of existing development.
4. Conserve agricultural land as open space.
5. Work with neighboring communities to encourage orderly, efficient development patterns that minimize conflicts between urban and rural uses.

Policies:

1. Utilize the Village of DeForest extraterritorial zoning authority to ensure development occurs only in urban expansion areas and not in agricultural preservation areas.
2. Utilize the City of Sun Prairie extraterritorial zoning authority to ensure development occurs only in urban expansion areas and not in agricultural preservation areas.
3. Prioritize the Madison – Sun Prairie Community Separation Agreement Area to conserve agricultural areas as open space.
4. Utilize the City of Madison extraterritorial zoning authority to ensure development occurs only in urban expansion areas and not in agricultural preservation areas.

AGRICULTURAL RESOURCE PROGRAMS AND RECOMMENDATIONS

Direct Intensive Development into the Village of DeForest and Cities of Sun Prairie and Madison

Large-scale residential and commercial development projects, which have the greatest opportunity for conflicts with agricultural uses and detract from open space and natural corridors, should be directed away from existing farms, areas of farm operations, and environmentally sensitive areas. The Town of Burke intends to direct intensive development into the Cities of Sun Prairie and Madison and the Village of DeForest. Specific development areas and criteria will be guided by the comprehensive plans and ordinances of each respective municipality.

Transfer of Development Rights (TDR) Program

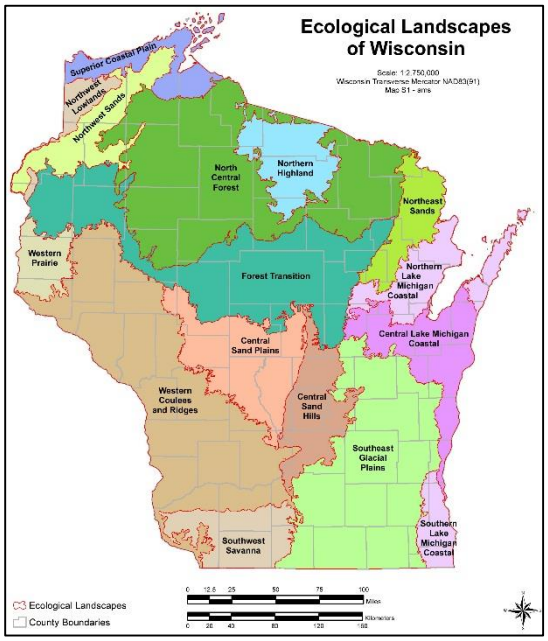
Transfers of development rights programs allow landowners to transfer the right to develop one parcel of land to a different parcel of land. TDR is used to shift development from agricultural or environmentally sensitive areas to designated growth areas closer to municipal services and existing development. When a landowner sells property, generally all the rights (develop, lease, sell, mine, etc.) are transferred to the buyer. TDR programs enable landowners to separate and sell the right to develop land from their property rights. In this way, TDR programs can be utilized to protect prime farmland, conserve environmentally sensitive areas, protect scenic views, and preserve historic landmarks. In 2010 the Dane County Board of Supervisors adopted a TDR ordinance that gives towns the choice of whether or not to

participate in the County's TDR program. The program is intended to reduce sprawl and protect farmland, natural resources, open space, and rural lands.

The Dane County Code provides a legal and administrative framework to support town-initiated TDR programs. The ordinance includes two overlay zoning districts: sending areas (TDR-S) and receiving areas (TDR-R). Sending areas are lands designated for protection while receiving areas are lands that will receive development rights, incentivized with higher density allowances or other similar regulations. TDR-S districts can occur in areas indicated as suitable for agriculture, conservation, and natural resource use with limited or no potential for non-agricultural development. The Dane County Farmland Preservation Plan (FPP) indicates that sending areas should be, but are not required to be, within a designated Farmland Preservation Area. Burke is not within a preservation area. However, the FPP also indicates that receiving areas should be within areas shown as non-farm planning areas, which Burke is a part of. Development rights may also be sold to a public conservation agency or nonprofit land trust. Chapter 4 of the Dane County Farmland Preservation Plan outlines the necessary steps Town's must take to implement TDR-S or TDR-R overlay districts.

NATURAL RESOURCE INVENTORY

The area around the Town of Burke is heavily developed and highly populated. Pressure on natural resources is high and unlikely to diminish in the short-term. Isolation or fragmentation of native habitats is a major concern for planning and management at a state, county, and local level. A comprehensive approach to understanding the natural resources within Dane County and in and around the Town will have many benefits to best ensure long-term viability of the resources present.



Source: Ecological Landscapes Handbook. WDNR. http://dnr.wi.gov/topic/landscapes/documents/18051Intro.pdf

Landforms/Topography

In order efficiently and effectively plan and manage natural resources in Wisconsin, the WDNR created an eco-region map to divide the state into ecological landscapes. Ecological landscapes are a combination of physical and biological factors, such as climate, geology, topography, soils, water, and vegetation. While the ecological landscapes share characteristics, each offers distinct differences which allow for a number of management opportunities.

The Town of Burke lies entirely in the Southeast Glacial Plains Ecological Landscape (seen in light green on the previous page). This landscape is characterized by rolling topography and an outstanding array of glacial landforms like the Kettle Moraine and Devil's Lake area. Underlying bedrock is primarily limestone and dolomite with some sandstone and shale. The productive silt loam soils support a dominant agricultural land use (58%).[16] There are numerous wetlands including large fertile marshes, diverse warm water rivers and streams, and marl lakes. The tallgrass prairie and oak savanna are two globally rare communities found in this ecological landscape.

One Significant Ecological Place and several areas of Protected Land are currently within the Town of Burke. Protected Lands include most state, federal, and county ownership or easements as well as lands owned or managed by land trusts and NGOs such as The Nature Conservancy and others. Both the significant ecological place and protected lands are associated with the Cherokee Marsh, which is explored in more detail below.

Metallic and Nonmetallic Mineral Resources

The miner on the Wisconsin state flag is testament to the fact that mining has always been a large part of the economic and industrial base of the state. Metallic mining, or mining for metals such as copper, lead, iron, and zinc, can be a boost to communities and the state but can also seriously harm natural resources. Because of its volatile nature and the unique location of the specific resources, metallic mining has traditionally been isolated in areas of low-density populations in the northern half of the state. There are no closed, existing, or proposed metallic mining sites within Dane County.

Nonmetallic mining, or the extraction of stone, sand, rock, or similar materials, is most common in quarry and pit mines. Under State Statutes (295.20), landowners who want to register their property as nonmetallic mining deposits are required to notify each county, city, village, and/or town that has zoning authority over their property. Registrations must be recorded at the County Register of Deeds in the County where the mineral deposit is located. State law limits the ability of a municipality or county to rezone or otherwise interfere with the future extraction of a mineral resource from a registered nonmetallic mineral deposit. It is important to note that zoning changes prohibiting mining on land registered as a marketable nonmetallic mining deposit cannot take effect during the registration period. Registration is effective for 10 years and renewable for an additional 10 years. In addition, registration on property with active mining operations can be renewed for as long as mining is ongoing. Zoning changes may take effect after the registration has expired.

[16] Southeast Glacial Plains Ecological Landscape.
http://dnr.wi.gov/topic/landscapes/index.asp?mode=detail&Landscape=9

Dane County and the local zoning bodies are responsible for all mine siting requirements and regulation. County zoning (Chapter 10.191) allows nonmetallic quarrying or mineral extraction operations as a conditional use within the following zoning districts: A-1 Agriculture District, A-B Agriculture Business District, A-1 (EX) Exclusive Agriculture District[17], A-2 Agriculture District, A-3 Agriculture District, C-2 Commercial District, M-1 Industrial District. In addition, the County has developed a set of standard conditions (Chapter 74, Dane County Code) that the Zoning and Land Regulation committee applies to all new mineral extraction operations. Currently, 113 active mineral extraction sites are in Dane County. Of the 113, three are located in the Town of Burke.

Groundwater Resources

Groundwater is made up of the portion of rainfall that does not run off to streams or rivers and does not evaporate or transpire from plants. This water percolates down through the soil until it reaches the saturated zone of an aquifer. Groundwater quality and quantity is important because it supplies nearly all of Dane County's water demands. Additionally, the streams, rivers, and wetlands in and around the Town are recharged by groundwater.

According to the *Dane County Farmland Preservation Plan*, approximately 75 percent of groundwater in Dane County is demanded for domestic (31 percent), public (19 percent), and industrial (26 percent) uses.[18] Two distinct groundwater sources supply Dane County's water demands. Shallow sandstone aquifers serve private domestic wells in rural areas, while the deep Mt. Simon aquifer serves municipal wells. Most groundwater in Dane County is replenished from precipitation falling within county boundaries.

The Town of Burke sits atop the Mt. Simon aquifer. As part of the 1999 Land Use Plan, the Town developed Groundwater Hazard maps that indicate the relative susceptibility for groundwater pollution that could originate from various industrial, municipal, and agricultural sources. Much of the town lies in what are considered moderate to greatest groundwater pollution hazard areas. In addition, a four-mile diameter protection zone surrounds the well located in Section 5 near the Village of DeForest, and the Town has adopted a wellhead protection plan and ordinance. Community utilities and facilities are discussed in Chapter 6.

In rural areas of Dane County, nitrates are considered the most common and widespread contaminate for groundwater. While high nitrate levels have been associated with certain rural subdivisions, the high area wide concentration may be the result of nitrogen fertilizer use in the Town's agricultural past.

[17] As of January 1, 1997, the Town of Burke has not elected to have this district apply in the town.

[18] Dane County *Farmland Preservation Plan, 2012*

Watersheds and Surface Waters

The Town of Burke is located in the Lower Rock River Basin, which covers over 3,700 square miles in south-central Wisconsin. Water from the Lower Rock River Basin enters the Mississippi River via the Rock River and eventually ends up in the Gulf of Mexico. Within the Rock River Basin, the Town is split by the Yahara River and Lake Monona and Yahara River and Lake Mendota Watersheds. The Yahara River and Lake Mendota Watershed covers 85 square miles and contains portions of the Yahara River, Token Creek, Lake Mendota, and the Cherokee Marsh. The Capital Area Regional Planning Commission (CARPC) ranked this watershed as a high priority candidate for a nonpoint source priority watershed project, primarily because of the rapidly urbanizing areas of DeForest, Sun Prairie, and Madison. Within the Yahara River and Lake Mendota Watershed is the Token Creek Watershed.

Token Creek. Image courtesy Token Creek Watershed Association. www.tokencreek.org

The major body of water that runs through the Town is Token Creek. Token Creek is an important tributary of the Yahara River, joining it just before entering Cherokee Lake and ultimately Lake Mendota. In fact, Token Creek generally contributes more water to Lake Mendota than the Yahara River itself. Token Creek is a cold water, spring-fed Class III trout stream that passes through residential and predominantly agricultural areas. Because of the substantial inflow of groundwater to Token Creek, nonpoint source pollution is an ongoing issue. Class III streams are streams where the level of development has overwhelmed the biological integrity and function of the stream. Remediation strategies are directed more to the aesthetic and cultural amenities associated with these streams

Stormwater management in Burke is a collaborative effort between the Town, County, and CARPC, and involves the use of best management practices (BMPs) to address adverse water quality and quantity impacts generated by uncontrolled stormwater runoff. Chapter 14 of the Dane County Code includes county-wide stormwater management standards used by landowners and developers to address the unique characteristics of their land. It is CARPC policy that stormwater management measures should be aimed at mitigating to the maximum extent practicable the cumulative and incremental adverse impacts of development on surface water and groundwater quality and quantity and associated ecological functions.

Dane County Drainage Districts

Drainage districts are local government entities organized to drain land for agriculture or other purposes. Most Midwestern farmland has too much water, and farmers rely on surface and subsurface drainage

systems to produce crops. Land is drained using ditches that cross individual property boundaries and can span several hundred acres. Landowners in a district benefit from drainage because it removes standing water from productive agriculture fields without compromising adjacent properties. The drainage systems also protect structures built below grade that are subject to periodic flooding. Landowners who benefit from drainage are required to pay special assessments to cover the cost of constructing, maintaining, and repairing the drainage system.

Of the 72 counties in Wisconsin, 31 contain one or more drainage districts. In Dane County, there are more than 30 districts, two of which lie within or adjacent to the Town of Burke. Districts 27 and 9 are present within the Town.

Floodplains

In Wisconsin, floods are one of the most common types of natural disasters, and each year communities suffer millions of dollars in flood damages. The Federal Emergency Management Agency (FEMA) designates floodplain areas in the state. These are areas predicted to be inundated with flood waters in a 100-year storm event (i.e., a storm that has a 1 percent chance of happening in any given year). The State requires County regulation of development in floodplains within the Town of Burke.

The National Flood Insurance Program maps produced by the FEMA should be referenced for official delineation and elevations of floodplain boundaries. Development is strongly discouraged in floodplains to avoid both on-site and up and downstream property damage. In the Town of Burke, floodplains are associated with Token Creek and Cherokee Marsh, primarily in the area west of CTH CV, and the north and western parts of the Town. See Map 6 for more information.

Wetlands

Wetlands are ecosystems typically found where land and water meet, transitional areas between dry upland and wet aquatic environments. Wetlands play a significant role in maintaining the quality of groundwater and surface water and provide valuable habitat for fish, birds, and other species.

Additionally, wetlands affect both flooding and water quality because they store large amounts of water as well as

Cherokee Marsh. Image courtesy City of Madison
http://www.cityofmadison.com/parks/parks/park.cfm?id=1182

stabilize sediments, nutrients, and other pollutants, keeping them from impacting areas located farther downstream. Wetlands provide a critical buffer in the chain of events between cause and effect. Using air photos and original public land survey records, the City of Madison has documented a loss of over 640 acres of wetlands along the Upper Yahara River in the past 160 years.

A significant amount of wetlands are present in the Town. The largest section lies in the northwestern portion and is part of Dane County's largest wetland, Cherokee Marsh. The other significant wetland areas identified within the Town are associated with the Token Creek, which feeds the marsh.
Dane County has adopted shoreland, shoreland/wetland, and floodplain zoning ordinances (unincorporated areas only) that control the use and development of wetlands. Ordinances include a specific listing of permitted uses in the shoreland/wetland district, as well as list other allowed uses requiring a conditional-use permit. The ordinance specifies that all uses not listed are prohibited unless a rezoning should occur, which shall not have a significant impact on any of the wetland functions. Final approval of the zoning amendment must be made by the WDNR, whose authority supersedes that of the County.

In addition to zoning, communities may use subdivision regulations to protect wetland resources. Subdivision ordinances apply when a parcel of land is divided into lots for sale or development. Many communities use subdivision regulations to protect wetland resources by imposing site restrictions, design standards, and open space dedication requirements. Subdivision regulations often include specific design standards for width and alignment of parkways and drainage ways, and public easements adjacent to streams to anticipate potential flow volumes. Besides easements, the regulation may require dedication of land to the public for resource protection and open space or recreation purposes. Plat approval is often conditioned upon compliance with design standards for critical areas, or adequate protection or preservation of certain environmental features in the site development plan.[19]

Token Creek. Image courtesy Rich Armstrong, 2012. http://www.windsorwi.gov/index.asp?Type=B_PRGSRV&SEC=%7BA4070801-2BCA-4C00-91D0-A463779D245F%7D

Woodlands and Natural Vegetation

Much of the woodland and natural vegetation areas within the town and county have been significantly changed due to agricultural and urban land use practices. Prior to development in the area, much of Dane

[19] *Dane County Wetlands Resource Management Guide*, 2008.

County was covered with prairies, wetlands, oak savanna, and contiguous forests. Isolated remnants of these native plant communities remain in several locations in the area, but the majority of the land use has been converted to agricultural and urban land uses.

Environmental Corridors

Environmental corridors are continuous systems of open space in urban and urbanizing areas that include environmentally sensitive lands and natural resources requiring protection from disturbance and development. Corridors are located mainly along stream channels, floodplains, wetlands, steep slopes and other resource features and are managed at a county level. The WDNR has also identified resource protection corridors, specifically designated to protect a particular natural resource found in that area. In

The Yahara River. Image courtesy Keith Dotson. http://www.flickr.com/photos/keith_dotson/4778994544/in/photostream/

Dane County, there are thousands of acres of environmental and resource protection corridors. Within the Town of Burke, the major resource protection corridor is associated with the Cherokee Marsh and Token Creek areas. There are several areas of environmental corridors within the jurisdictions of the cities of Madison and Sun Prairie, adjacent to the Town.

Furthermore, in 2006, the WDNR published the Wisconsin Land Legacy Report which identified 229 Legacy Places and 8 statewide Needs and Resources that are considered highest priority areas for conservation in the state. While the publication is an educational resource rather than a regulatory document, it provides a basis for conservation initiatives throughout the state. The Upper Yahara River and Lakes area, associated with the Cherokee Marsh and the Town of Burke, is the only area classified as a Legacy Place within the Madison Metropolitan Area. Map 6: Natural Features documents the environmental corridors in and adjacent to the Town.

Regal Fritillary Butterfly. Image courtesy Eric Preston. http://ericpreston.com/p76404109/h172F3246#h172f3246

Rare Species Occurrences

The Wisconsin Natural Heritage (NHI) Working List, maintained by the WDNR, contains species known or suspected to be rare in the state and natural

communities native to Wisconsin. It includes species legally designated as "Endangered" or "Threatened" as well as species in the advisory "Special Concern" category. There are 14 environmentally sensitive elements identified in the Town of Burke.[20] Sensitive elements are those species or communities particularly vulnerable to collection or disturbance. Table 12 indicates two state-listed threatened animal species and one butterfly. Six plant species and five communities are also present on the NHI Working List.

TABLE 12: THREATENED, ENDANGERED AND SPECIAL CONCERN SPECIES IN BURKE

Group Name	Scientific Name	Common Name	State Status*	State rank**
Bird	*Ammodramus henslowii*	Henslow's Sparrow	THR	S2,S3B
	Tyto alba	Barn Owl	END	SNA
Plant	*Agastache nepetoides*	Yellow Giant Hyssop	THR	S3
	Cuscuta glomerata	Rope Dodder	SC	S1
	Cuscuta polygonorum	Knotweed Dodder	SC	S1
	Cypripedium candidum	Small White Lady's-slipper	THR	S3
	Polytaenia nuttallii	Prairie Parsley	THR	S2
	Scirpus cespitosus	Tufted Bulrush	THR	S2
Community	*Calcareous fen*	Calcareous Fen	NA	S3
	Northern wet forest	Northern Wet Forest	NA	S4
	Shrub-carr	Shrub-carr	NA	S4
	Southern sedge meadow	Southern Sedge Meadow	NA	S3
	Wet prairie	Wet Prairie	NA	SU
Butterfly	*Speyeria idalia*	Regal Fritillary	END	S1

** State Status: Protection category designated by the Wisconsin DNR. END = Endangered; THR = Threatened; SC = Special Concern.*

***State Rank: State element rank.*

- ***S1** Critically imperiled in Wisconsin because of extreme rarity, typically 5 or fewer occurrences and/or very few (<1000) remaining individuals or acres, or due to some factor(s) making it especially vulnerable to extirpation from the state.*
- ***S2** Imperiled in Wisconsin because of rarity, typically 6 to 20 occurrences and/or few (1000-3000) remaining individuals or acres, or due to some factor(s) making it very vulnerable to extirpation from the state.*
- ***S3** Rare or uncommon in Wisconsin, typically 21-100 occurrences and/or 3000-10,000 individuals.*
- ***S4** Apparently secure in Wisconsin, usually with >100 occurrences and >10,000 individuals.*
- ***S5** Demonstrably secure in Wisconsin and essentially ineradicable under present conditions.*
- ***SNA** Accidental, non-native, reported, but unconfirmed, or falsely reported.*
- ***SH** Of historical occurrence in Wisconsin, perhaps having not been verified in the past 20 years, and suspected to be still extant. Naturally, an element would become SH without such a 20-year delay if the only known occurrence were destroyed or if it had been extensively and unsuccessfully looked for.*
- ***SNR** Not Ranked, a state rank has not yet been assessed.*
- ***SU** Cannot currently rank. Possibly in peril in the state, but status is uncertain due to lack of information or substantially conflicting data on status or trends.*
- ***SX** Apparently extirpated from the state.*

Ranking long distance aerial migrant animals presents special problems relating to the fact that their non-breeding status (rank) may be quite different from their breeding status, if any, in Wisconsin. In other words, the conservation needs of these taxa may vary between seasons. In order to present a less ambiguous picture of a migrant's status, it is necessary to specify whether the rank refers to the breeding (B) or non-breeding (N) status of the taxon in question. (e.g. S2B, S5N).

[20] Natural Heritage Inventory County data by Town. *Elements by Townrange for Dane County*. Data updated 03/29/2013. http://dnr.wi.gov/topic/NHI/CountyData.html

Map 6: Natural Features

State Parks and Natural/Wildlife Areas

The Cherokee Marsh State Natural Area, designated a state natural area in 1976, is part of an extensive wetland complex of more than 2,000 acres. The Marsh represents a gradient of habitat types ranging from open water to hardwood forest and warm season grass fields. The banks of the Yahara River, which feeds the Marsh, are typical emergent wetland vegetation consisting of cattail and wetland plants. Because of its size and differentiating characteristics, the Marsh has been divided into a northern and southern unit. The northern unit, the part which lies within and adjacent to the Town, has been classified as a fen and is home to many species of mammals, amphibians, reptiles, and birds. State Natural Areas have very few public facilities like picnic areas or restrooms, but provide a variety of recreational activities like hiking, fishing, outdoor education, and wildlife viewing, amongst others.

A report commissioned by Trout Unlimited shows that recreational angling in the Driftless Area of southeast Minnesota, southwest Wisconsin, northeast Iowa, and northwest Illinois generates $1.1 billion to the local economy. For every dollar spent on stream restoration, an additional $25 is returned to the regional economy each year thereafter.

Immediately adjacent to the north of the Cherokee Marsh is the Cherokee Marsh State Fisheries Area. WDNR Fisheries Areas are located along stream, rivers, and lakes and are designated to protect and restore water quality by improving habitat and fishing opportunities. Fisheries help replenish native fish populations that have diminished from over-harvesting and deteriorating habitat. In conjunction with State Natural Areas, Forest, Trails, and Wildlife Areas, fisheries often include lands adjacent to streams and lakes and help protect a larger watershed and provide for compatible recreational uses.

Additional information about the Cherokee Marsh can be found through the Wisconsin Wetland Association (http://www.wisconsinwetlands.org/), Friends of Cherokee Marsh (http://cherokeemarsh.org/) and the WDNR (http://dnr.wi.gov/topic/lands/naturalareas/index.asp?sna=130, http://dnr.wi.gov/topic/lands/fisheriesareas/535cherokeemarsh.html).

County and Local Parks

County and Local Parks will be discussed in detail in Chapter 6: Utilities & Community Facilities.

NATURAL RESOURCE GOALS, OBJECTIVES, AND POLICIES

Goal:

To preserve, protect and improve environmental resources in the Town and surrounding area.

Objectives:

1. Protect environmentally sensitive areas such as floodplains and wetlands from urban

encroachment, specifically Token Creek and Cherokee Marsh.

2. Support management options that mitigate the effects of urban development on the Token Creek watershed.
3. Support open space preservation to protect outstanding scenic resources.
4. Encourage land use development were soil capability, slope and other physical factors are most suitable.
5. Coincide with the County's Park Plan for trails, land acquisition, and development.
6. Ensure future development does not disrupt natural drainage ways and is consistent with area storm drainage planning.

Policies:

1. Protect environmental corridors as a composite of the Town's most sensitive natural areas, including wetlands and floodplains, especially adjacent to future development areas.
2. Work with the WDNR, County, and surrounding municipalities to link natural resources preservation with recreational and economic opportunities.
3. Protect surface water quality and groundwater quality by supporting stream bank management, natural shoreline restoration, erosion control, river and creek clean-up initiatives, proper agricultural practices, stormwater management, and the use of vegetative buffers.
4. Carefully review proposals for mineral extraction operations, and the reclamation of existing mineral extraction sites.
5. Encourage landowner participation in programs that provide financial assistance and technical assistance for land management activities and land preservation efforts, particularly in flood prone areas, such as the Conservation Reserve Program and the Nature Conservancy.
6. Pursue alternative stormwater management techniques to prevent and reduce flooding within the Town.
7. Pursue state and federal programs to help protect natural resource from non-point pollution and offset the costs of implementing best management practices.

NATURAL RESOURCE PROGRAMS AND RECOMMENDATIONS

Protect Environmental Corridors and Preserve Open Space

Environmental corridors are present within and adjacent to the Town, but truly do not adhere to administrative boundaries. Environmental corridors provide habitat areas, recreation, scenic views, and flood mitigation, amongst many other things, in a linear (corridor) pattern on the landscape that ties jurisdictions together for management and protection purposes. The social, economic, and environmental value associated with natural features is immeasurable and provides significant value for the community.

New development should be discouraged in environmental corridors and in areas associated with scenic

open space. Development types should be limited to those which will not impair the resource and are generally compatible with existing and proposed uses on surrounding lands. Protection of natural resources should be paramount in reviewing proposed development within and adjacent to environmental corridors.

The Town should conduct or require viewshed analysis before approving new development. A viewshed analysis would identify the places from where new development could be seen from other locations, and the impact of view that would result from the proposed development. New development should be designed and located in a manner that does not detract from the Town's scenic views associated with open spaces.

Protect Rare Species and Wildlife Habitat Areas

Protection of rare species and wildlife habitat has many benefits. It preserves open spaces and natural areas, which often produce the scenic beauty of a place; it increases stewardship and awareness; it enhances recreational experiences; and it creates a sense of pride within the Town. Protecting habitat and rare species may also minimize the potential of a species becoming "threatened" or "endangered," thereby requiring federal intervention under the Endangered Species Act. Protection and management of rare species and wildlife habitat will help the Town develop a legacy over the next 20 years, which recognizes the importance of preserving environmentally sensitive areas.

Expand Nature-based Tourism

Nature-based tourism centered on the Token Creek provides the Town an opportunity to enjoy the financial benefits of increased economic development while simultaneously preserving the area's environment and sensitive areas. The area's abundant natural resources make the Town particularly well-suited to attract growth in nature-based activities like fishing, boating, and wildlife watching. The Town may work with the State and the Department of Natural Resources to promote the enhancement and possible expansion of the Token Creek environmental corridor as it ties in to state-owned and maintained facilities like Cherokee Marsh State Natural Area and State Fishery.

The Town should also work with the University of Wisconsin Extension (UWEX) to develop tools and information resources to provide digitally and in hardcopy format to residents and visitors of the Town. More information about the UWEX resources can be found at http://urpl.wisc.edu/people/marcouiller/projects/clearinghouse/index.html.

One tool for realizing the expansion of tourism in Burke is the implementation of tax incremental financing (TIF) for towns. Assembly Bill 437, passed in 2003, provided towns the limited ability to exercise all the powers of cities and villages related to the creation of TIF districts. Under the bill, the Town of Burke

could exercise the authority to create a TIF district, and expend money or incur monetary obligations for projects costs related to that TIF district for the following types of projects: agriculture, tourism, forestry, manufacturing, residential development, and retail development.

The second Amendment to the assembly bill (AA 2) specifies that towns are not allowed to exercise power under the TIF authority provided under the bill within the extraterritorial zoning jurisdiction of a city or village unless the governing body of the city or village adopts a resolution that approves the exercise of such power by the town.

Token Creek County Park as seen from atop a hill off CTH CV. Photo courtesy Mead & Hunt, Inc. 2013

With the support of surrounding and overlapping jurisdictions, the Town of Burke can utilize a TIF to pursue development related to tourism for camps, RV parks, campgrounds, public (disc) golf courses, etc. In tandem with the County and WDNR, the Town can implement recommendations of the Token Creek County Park Master Plan and the Cherokee Marsh State Natural Area and Fishery.

Review Proposals for Mineral Extraction Sites and Enforce Reclamation and Remediation

Three mineral extraction sites are currently located within the Town. Over the next 20 years, the Town will increasingly lose acreage as it transitions land to the jurisdictions of the surrounding municipalities. During this time, the Town should carefully review any proposals for new extraction sites to manage and prevent any land use conflicts which may arise from the potential impacts associated with mineral resource extraction. The Town will work to assure that applications for approval of extraction operations present a clear picture of proposed activities and support those activities with a detailed reclamation plan and map. Applicants will also be required to submit plans for post reclamation operations, once the mine becomes inactive. The Town will work with the County to ensure notification for surrounding land owners is proper and just.

Protect and Enhance the Token Creek Watershed (Cooperative Plan)

To minimize reduction of water table levels, particularly in the Token Creek Watershed, the Town of Burke should implement mitigation measures outlined in the 1999 Land Use Plan. These mitigation measures include stormwater management and erosion control, habitat restoration, groundwater management, impoundments, and management of agricultural lands.

Stormwater Management and Erosion Control

The Town should pursue the construction of stormwater mitigation structures for minimizing stormwater peak flow, volumes, and water resource degradation. This is a proactive measure to mitigate the effects of flooding. These structures are also used to increase groundwater recharge, enhance water quality, and improve recreation.

1. Three major types of stormwater mitigation structures can be construction:
    a. Detention basins
    b. Infiltration structures (permeable pavement, infiltration basins, infiltration trenches, buffer strips and filter strips, and grassed swales)
    c. Artificial wetlands

2. Development of non-structural measures to protect the areas within the watershed from potential stormwater runoff and erosion problems associated with urbanization include:
    a. Adoption and Implementation of Stormwater and Erosion Control Ordinances
    b. Adoptions and Implementation of Stormwater Management Plans
    c. Establishment of Stormwater Public Utilities
    d. Education of citizens about protection practices

Habitat Restoration

Take steps to stop habitat degradation that is currently occurring within areas of the watershed and then implement strategies to restore degraded or destroyed habitats.

1. Remediate stream bank erosion
    a. Riprapping
    b. Installation of deflectors
    c. Artificial seeding with riparian plants
2. Increase wetland acreage
    a. Enhance existing wetland areas
    b. Restore former wetland areas
    c. Create new wetlands

Groundwater Management

Develop local and regional groundwater management strategies that address concerns of both quality and quantity.

1. Quality strategies
    a. Municipality Well-Head Protection Plan
    b. Implementation of farm management groundwater pollution preservation techniques
    c. Proposer sitting and maintenance of septic systems

d. Road salt use limits
e. Individual household measures

2. Quantity strategies
    a. Avoid sensitive areas for municipal well locations
    b. Educate citizens on the importance of conserving water
    c. Artificially recharge water levels by using imported water or re-infiltration of treated wastewater

Impoundments

Impoundments, also known as reservoirs, are artificially created standing water bodies produced by dams on streams or rivers. The removal of impoundments within the watershed area is a desirable strategy because it would allow streams within the area to become deeper, colder, and healthier.

Management of Agricultural Lands

The Town should pursue the implementation of agricultural management strategies that control non-point sources of pollution, such as the prevention of soil erosion and limitations on fertilizer, manure, and pesticide applications.

CULTURAL RESOURCES

Historic, archeological, and cultural resources contribute to a community's quality of life and provide a feeling of social and cultural continuity between the past, present, and future. For instance, the Town of Burke derived its name from Rt. Hon. Edmund Burke, Irish patriot, orator, and poet.[21] Preservation of resources helps to foster a sense of pride and place and often provides economic benefits to property owners and communities through tourism and increases in property values.

As with many areas throughout Dane County, most Native American and original European settlement occurred around sources of water. In 1984 the Dane County Historical Society recognized the Token Creek area as historically significant place and placed an informational sign near the creek. The sign reads:

> Attracted by abundant water, early Indian inhabitants erected effigy mounds in the area. George Spaulding was the first white settler in 1841. The Town of Windsor's first election was held in 1847 at Charles Lawrence's Prairie House Inn. A post office was established in that year but discontinued in 1902. The name Token was derived from Tokaunee, a minor Indian chief. Completed in 1844, the Fort Winnebago Road from Madison passed through Token Creek. Guided by the landmark Big Hill, homesteaders and lumberman journeyed through on their way to northern pineries. Token Creek had a school, Congregational church, two mills and an early fish hatchery. Veterans of five wars, including the Revolutionary War, rest in the cemetery. Until destroyed by fire in 1881, the Token Creek Tavern was the area's social center. Under the glow of tallow candles, couples danced to the

[21] *Dane County Place-Names,* Frederic G. Cassidy

fiddle music of Marcus Wheeler, father of poetess Ella Wheeler Wilcox. Token Creek declined after the railroads bypassed it.[22]

In addition, an Indian Trail once passed through what is now the Town of Burke. The trail leads from Koshkonong and Lake Monona, to Fort Winnebago at the portage of the Wisconsin and Fox Rivers, and on to the timber mines in northern Wisconsin. The trail was used as a trade route from Madison to Portage.[23]

Historic Sites

The Wisconsin Historical Society's Architecture and History Inventory (AHI) contains data on a wide range of historic properties throughout the state. A 1934 *Capital Times* article indicates the first house and first barn in Burke were built by William Lawrence in 1837, who later built the Prairie house.[24] According to the AHI, 52 documented properties are in the Town of Burke. These properties include the S.W. and Sarah Thompson Farm, Lucinda and Samuel Messerschmidt House, the Hillside Barn, and the Hanchett-Spaulding House. The S.W. and Sarah Thompson Farm and the Lucinda and Samuel Messerschmidt House have both been determined eligible and the Hillside Barn, although demolished, is listed as potentially eligible for the National Register of Historic Places (National Register). Additional information about these and other properties may be found at the Wisconsin Historical Society Website at: www.wisconsinhistory.org/ahi

The Lucinda and Samuel Messerschmidt House, built in 1930 is a Tudor Revival style and has been determined eligible for the National Register of Historic Places. Source: Wisconsin Architecture and History Inventory

Archeological Sites

The Wisconsin Historical Society also contains information on archaeological sites within the state. According to the Archaeological Sites Inventory, current Town lands contain 37 archeological sites, 11 of which are burial sites. One area contains Native American burial mounds. Although the surface of the mounds has been destroyed by cultivation or development, the site is still subject to Wisconsin State Statute 157.70, protecting human burial sites. Other burial sites include at least four Euro-American

[22] *Token Creek County Park and Natural Resource Area Master Plan*, May 2011.

[23] *Says Town of Burke Named After Patriot.* Capital Times, Madison, August 31, 1934. http://www.wisconsinhistory.org/

[24] *Says Town of Burke Named After Patriot.* Capital Times, Madison, August 31, 1934. http://www.wisconsinhistory.org/wlhba/articleView.asp?pg=4&id=4586&hdl=&np=Capital+Times&adv=yes&ln=&fn=&q=&y1=&y2=&ci=&co=&mhd=&shd=

cemeteries, some of which are still used. There are also a number of Town sites containing evidence of early habitation by Native Americans between 1,000 BC and 1,000 AD and one much earlier site (to 9,000 BC). All the archeological sites are on private lands and none is listed on, or eligible for, the National Register.

Community Special Events

A handful of special events place within the Town of Burke on an annual basis. These events include, but are not limited to:

- Annual picnic (August)
- Arbor Day celebration (April)
- Easter egg hunt (March/April)
- Spring cleanup day (May)
- Token Creek Chamber Festival (August – September)
- Token Creek Independence Day celebration (July)
  - Remembrance Ceremony at the Token Creek Cemetery
  - Hiney Run, a "bass-ackwards" 100 yard uphill race
  - 4th of July Parade at Portage and Rattman Roads.

The Token Creek Lions club plays an instrumental role in planning and carrying out many of these events. More information can be found at www.tokencreeklions.org and www.tokencreekfestival.org.

Images from the Token Creek July 4th celebration, courtesy of the Token Creek Lions Club

CULTURAL RESOURCE GOALS, OBJECTIVES, AND POLICIES

Goal:

Preserve and enhance the Town's cultural resources.

Objectives:

1. Identify and promote preservation of the Town's cultural, historic, and archaeological resources.

2. Increase the quantity of community special events.
3. Increase research and documentation of Native American settlement and activity areas.
4. Protect scenic views in the Town.

Policies:

1. Support local festivals, fairs, tours, community breakfasts, and markets that celebrate the Town's farming heritage, exurban character, and history.
2. Partner with the Token Creek Lions Club to continue to delivery community special events.
3. Encourage the preservation and rehabilitation of identified cultural, historic and archeological resources when specific sites are proposed for development.
4. Participate in updating or records and mapping to fully document cultural, historical, and archeological resources.
5. Prohibit incompatible land uses (e.g., high traffic generators, noisy uses, or unattractive uses) from locating within or next to cultural and historic resources and residential areas.
6. Conduct additional research/study to create interpretive information regarding the history of settlement within the Token Creek watershed and how the Big Hill, stream and springs influenced settlement.
7. Partner with Dane County Parks to develop interpretive signs and exhibitions of former Native American settlement and activity sites.
8. Preserve and protect the scenic landscape of the Town.
9. Engage the Town Board early in the calendar year to plan, schedule, and publicize community special events.
10. Regularly update the Town website to include community special events.

CULTURAL RESOURCE PROGRAMS AND RECOMMENDATIONS

Encourage Cultural Heritage Tourism

The Town should work to encourage tourism opportunities that celebrate the area's cultural, historic, and archeological resources and bring economic vitality to the community. The National Trust for Historic Preservation defines heritage tourism as "travelling to experience the places, artifacts, and activities that authentically represent the stories and people of the past." Cultural heritage tourism helps make historic preservation economically viable by using historic sites and landscapes to attract travelers. The National Trust for Historic Preservation also indicates that studies have shown that heritage travels stay longer and spend more money than any other kind of travelers and a good heritage tourism program can improve the quality of life for local residents as well as serve visitors. Celebration of the Towns past through tourism will help its social and economic future.

The Town can pursue TIF districts as one mechanism to aid in financing this program. Refer to Nature Based Tourism under the Natural Resource Recommendations for more details.

Protect and Rehabilitate Known Historic and Archeological Sites

The Town of Burke has a number of historic and archeological resources. Under Wisconsin law, Native American burial mounds, unmarked burials, and all marked and unmarked cemeteries are protected from intentional disturbance. In situations where development is proposed in areas where historical and archeological resources exist, the Town will require developers to demonstrate how historical and archeological features will be preserved and recognized.

The Town should also explore the availability of State Historical Society grant money and state and federal tax credits to rehabilitate, restore, or relocate historic structures threatened by demolition or disrepair.

Preserve and Celebrate the Scenic Landscape

Scenic vistas are a very important resource in the Town of Burke, and this region of the state offers a diverse landscape of wetlands, prairies, forested areas, and agricultural lands. A number of local areas are also present that offer beautiful views of the landscape, key natural landmarks, and water bodies.

Within these areas of scenic beauty, the Town should conduct or require viewshed analysis before approving new development. A viewshed analysis would identify the places from where new development could be seen from other locations, and the impact of view that would result from the proposed development. New development should be designed and located in a manner that does not detract from the Town's scenic views.

Cooperate on a Comprehensive Survey of Historic and Archeological Resources

The historical and archeological sites outlined above include only those sites that have been identified and reported to the State Historical Society. Very little of Dane County and the Town of Burke land areas have been surveyed for the presence of archeological sites, cemeteries, or other historically significant areas. The presence of some Native American burial sites within the Town suggests that there may be other, currently undocumented sites in close proximity.

The Town of Burke should partner with Dane County, the Wisconsin Historical Society, UWEX, local historical societies, and other government agencies to complete a comprehensive, countywide survey of historic and archeological resources. The survey would involve both research and field work and should be conducted by trained archeologists or students under professional supervision.