Rock River Coalition

Rural Development Guidelines & Policies

Second Edition 2006
Wisconsin Farmland Development

Without strong policies, development will result in the continued loss of agricultural land. These maps illustrate why it’s important to actively protect farmland. A discussion on the importance of agriculture to the Rock River Basin can be found inside on pages 1-7.

The red on this map shows regions with high-quality farmland and high development pressure. Most of the Rock River Basin (shown in outline) meets these criteria.

The green areas are high-quality farmland with low development pressure. American Farmland Trust 1996

From 1995-1999, 20-90% of farmland sold in the Rock River Basin was removed from agricultural production as shown on this map produced by the University of Wisconsin Program on Agricultural Technology Studies (www.wisc.edu/pats).

See the inside back cover for more maps.
Situation & Context of Rural Development in the Rock River Basin

The Rock River Coalition’s Planning the Rock Issue Team supports land use planning and development policies which encourage locating future commercial, industrial and residential development adjacent to existing development. The Rock River Coalition desires to slow the rate of urban sprawl, reduce the loss of agricultural lands, reduce the degradation of environmentally sensitive lands, maintain a viable agricultural economy and maintain the rural character of the Rock River Basin.

In its “Farming on the Edge” study, the American Farmland Trust identified this region as the third most threatened agricultural region in the United States.

Wisconsin’s citizens want economic opportunities, attractive places to live, and convenient places to recreate. These wishes are not mutually exclusive. However, poorly planned, scattered development poses serious risks to these desires, especially to agricultural land, habitat, surface water quality, groundwater quantity, air quality, scenic values and more. It is critical that we plan for development that protects the resources we value so that future generations will know the same vistas and resources we treasure today.

Concerns with Rural Development & Benefits to Focused Development

Development in rural areas is a problem for many reasons. The RRC Planning the Rock Issue Team has organized these reasons into two categories:

1. Domino Effect of Urban Fringe and Scattered Rural Development
2. Higher Cost of Providing Government Services to Fragmented Development

The Coalition has also provided numerous benefits communities could reap by following these guidelines. They have been organized into three categories:

1. Environmental Benefits of Focusing Development Adjacent to Existing Development
2. Agricultural Benefits of Siting Development Adjacent to Existing Development
3. Community Benefits of Siting Development Adjacent to Existing Development

Protecting Farming as an Asset to the Basin

The financial return to those in the farming business can fall below the levels needed for profitability due to market forces out of their control. When an agricultural operation fails, the financial strategy can be to sell some land for residential lots. Land values for residential development often exceed the price a farmer can pay for agricultural land, leading to scattered rural residential development.
With this in mind, the RRC team took a broad view when looking at methods that protect and promote agriculture. This manual provides suggestions for communities to consider, dividing them under the following topics:

1. Direct incentives or payments
2. Methods to make farming more profitable
3. Regulatory methods that support farming in the community

**RRC Policy Summary**

Nestled throughout this document are suggestions for governmental policies. Below we have summarized those policy recommendations. We believe that, as appropriate, communities or the state should adopt the following policies:

1. Communities should protect rural agricultural land and open space by:
   a. Allowing subdivision development only in areas adjacent to existing developments.
   b. Locating subdivisions adjacent to existing sewer services and utilities.
   c. Enforcing the wetland preservation rules in cities as well as rural areas.
   d. In general, not allowing new development near lakes and rivers.
   e. Guiding the location of rural housing through strong land use plans, farmland preservation plans, agricultural protection zoning and zoning ordinances.
   f. Identifying agricultural districts or farm priority areas and developing a plan for locating agricultural support businesses.
   g. Developing Purchase of Agricultural Conservation Easements, Purchase of Development Rights programs. They should work with land trusts to protect threatened and ecologically sensitive lands.

2. Subdivisions should utilize development principals to protect groundwater quality, retain groundwater infiltration, manage storm water and preserve wildlife habitat.

3. Municipalities should modify plans and zoning regulations to allow for a variety of setbacks, street widths and density standards to support conservation subdivision and traditional neighborhood design.

4. Counties should partner with the agricultural community and others to enhance economic profitability by supporting market research studies identifying environmentally sound value-added and/or niche market opportunities.

5. Economic development interests such as Economic Development Councils and farm organizations should examine the feasibility of a regional brand that identifies and promotes locally grown products.

6. Counties and towns should support affordable health care for rural farm families.

7. Counties and towns should develop methods of expediting farm permits, providing environmental standards are met.
Preface

This 2006 update, reflects suggestions and new information and research since the first edition in 2003. The Rock River Coalition Planning the Rock Issue Team hopes people involved with land use in the basin will consider the policies and suggestions provided, in order to protect our agricultural industry and environmental health while allowing for reasonable residential growth in the basin.

Rock River Coalition

The Rock River Coalition (RRC), a 501(3)(c) not-for-profit volunteer organization, was established in 1994. Its mission is to educate and provide opportunities for people of diverse interests to work together to improve the environmental, recreational, cultural and economic resources of the Rock River Basin.

Rock River Coalition Planning the Rock Issue Team

The Rock River Coalition (RRC) Planning the Rock Issue Team, a diverse group of individuals, completed the original document in 2003 and the second edition in 2006. They believe, if these policies and guidelines are examined and adopted by basin communities, it would result in a basin that honors residential growth, agriculture and the environment in a balanced, holistic fashion.

The original group included: David Carpenter, Dodge County Planning; Ken Rowley, Farm Bureau; Margaret Burlingham, LanDesign; Vernon Brummond, Dodge County and Town of Williamstown Board (deceased); Ruth Johnson and Jim Congdon, Department of Natural Resources; and Suzanne Wade, UW-Extension. Additionally, Daphne Holterman, Jefferson County Animal Agriculture Alliance; Gloria Hafemeister, Wisconsin Woman for Agriculture; and Greg David, Town and Country RC&D worked on this second edition.

Current issue team members are available to present the ideas contained in the manual to basin groups, county board committees and others.

Contact us either at the RRC office at 864 Collins Road in Jefferson WI 53549, 920-674-7443 or by email, rriver@excel.net.

You can also contact the UWEX Rock River Basin Educator at 920-674-8972 or by emailing suzanne.wade@ces.uwex.edu.
The Rock Issue Team Purpose:

promotes land use policies that balance economic growth with agricultural working lands and protection of its natural resources in order to maintain the Rock River Basin as an exceptional place to live, work and play.

We do this through:

• Developing a common goal among landowners, environmentalists and others to preserve our rural landscape: agricultural, woodland and wetland.

• Recommending to county and town boards specific planning strategies to develop and use land in an orderly and logical way.

• Forming an active, dedicated, working partnership to act on solutions to preserve our rural environment.

RRC Planning the Rock Team Objectives:

• Maintain, preserve and enhance the basin’s rural atmosphere, natural resources, scenic values and unique natural features.

• Encourage and promote a healthy agricultural economy through a variety of programs designed to support the farm economy.

• Focus new areas of growth close or adjacent to existing areas of development and community services. Direct more intense, urban forms of development into areas that can provide adequate municipal services to support the development. Encourage infill, urban renewal, redevelopment and increased housing densities.

• Promote cooperation and coordination between incorporated municipalities and adjoining towns to develop long-range plans and land use regulations that encourage development policies that protect agricultural lands, maintain rural character of the landscape, protect environmental corridors and plan growth adjacent to existing development and facilities.
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Rock River Coalition
Rural Development Guidelines & Policies

Section I: Manual Use and Premise

Manual Use
The information contained in this manual is intended as a general guideline for land use issues.

Manual Premise
The Rock River Basin has Wisconsin’s most productive soils and most favorable climate for agriculture. A strong transportation network of highways and rail lines and close proximity to major population centers, markets, commodity exchanges, and ports make the basin an ideal agricultural production area. The basin is also among the most rapidly growing areas in population and development. Land use decisions that are made now will determine the fate of agriculture in the Rock River Basin.

Section II: Situation and Context of Rural Development in the Rock River Basin

The Rock River Coalition’s Planning the Rock Issue Team supports land use planning and development policies which encourage locating future commercial, industrial and residential development adjacent to existing development. The Rock River Coalition desires to slow the rate of urban sprawl, reduce the loss of agricultural lands, reduce the degradation of environmentally sensitive lands, maintain a viable agricultural economy and maintain the rural character of the Rock River Basin.

Problem Context
The geologic, glacial and vegetative history of the Rock River Basin produced some of the most productive agricultural soils in the state earning the designation as the breadbasket of Wisconsin. Dane, Dodge and Fond du Lac counties are among the top agricultural producing counties in the state grossing more than $150 million in agricultural products annually. While the 3,700-square-mile basin is still primarily rural and agricultural in character, there are pressures from population growth and urbanization. The Rock River Basin is affected by four population centers: Madison, Milwaukee, Fox River Valley and Beloit/Rockford. Parts of the basin are experiencing some of the most rapid urbanization in the state.
The rural landscape is being transformed by the scattering of residential housing throughout the basin. This pattern of growth and development is changing the landscape and causing land use conflicts in Wisconsin communities. Areas of conflict include: annexation, water rights, increased flooding, siting of new highways, siting of utilities, individual versus community rights, inequitable government regulation, and conflicts between agricultural land use and adjacent residential property owners. Small, rural communities near the urban centers are experiencing rapid growth and an unwanted change in character to a more urbanized atmosphere.

Wisconsin’s natural resources are facing significant threats due to increasing human demands by a growing state population. This population growth, compounded by poorly planned development patterns in the last several decades, has increased demand for water, land and raw materials.

In its “Farming on the Edge” study, the American Farmland Trust identified the region that includes the Rock River Basin as the third most threatened agricultural region in the United States. (See the inside front cover for a map showing areas with good agricultural land and high development pressure.) The analysis concluded that 59 percent of the development in our region was occurring on prime agricultural soils. The suburbs of Milwaukee-Racine, Janesville-Beloit, Madison, Rockford and Chicago are expanding rapidly.

Moreover, the University of Wisconsin Program on Agricultural Technology Studies (PATS) mapped spatial patterns of agricultural land in Wisconsin from 1990-1997. On the inside front and back covers are maps showing trends in agriculture and land use in the Rock River Basin. Some of the most productive soils in the state are located in the Rock River Basin. We also have a high percentage of town land taxed as agriculture and a high percentage of farmland in row crops. These maps show how integral agriculture is to the Rock River Basin. Conversely, we also have a relatively high concentration of persons per square mile, a low percentage of aggregate town income from farming, a higher number of new houses per square mile, and a high value of agricultural land sold, showing the urbanization influence in the Rock River Basin.

It is estimated that Wisconsin will need 400,000 new living units over the next 20 years to accommodate population growth. However, the amount of land converted from open space or agricultural land to development can be significantly reduced and redirected by good land use planning. Land use plans should include strategies for redevelopment and infill as well as allowing for increased housing density in order to site more living units on smaller amounts of land.

Change is inevitable in Wisconsin. Wisconsin citizens want economic opportunities, attractive places to live, and convenient places to recreate. These are not mutually exclusive. However, poorly planned, scattered development poses serious risks to natural resources—agricultural land, habitat, water quality and quantity, air quality, scenic values and more. It is critical that we plan for development that protects the resources we value so future generations will know the same vistas and resources we treasure today.

How we use the land and the land decisions we make today are perhaps the most important, long-term environmental issues facing Wisconsin. The vast majority of land in Wisconsin is, and will remain, privately owned, where individual landowners, developers, and local governments are the principal land use decision-makers. Whether land is public or private, we are all stewards of the land.
Land use decisions should be made based on the concept of sustainability. Sustainable development means development that maintains or enhances economic opportunity and community well being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.

**Communities that are sustainable strive to:**

- Promote informed decision-making;
- Maintain natural and cultural aspects;
- Promote local and regional economic prosperity;
- Account for the full environmental, social, and economic costs of new development;
- Plan, finance and provide public facilities and services in a timely, orderly, and efficient way;
- Develop a balanced transportation system that offers people choices to meet their diverse needs and energy-efficient, low-cost modes of travel;
- Use natural resources in a way that sustains them over time;
- Foster livable communities;
- Preserve community character.

**Value and Importance of Agriculture in Wisconsin**

Wisconsin agriculture accounts for $51.5 billion in economic activity. This economic impact includes $28.6 billion in sales of all farm products, $17.6 billion in sales of products needed by farmers, and $5.3 billion in economic activity from people who work in agriculture-related businesses spending their earnings. Agriculture provides 420,000 jobs. That’s 12.2 percent of the workforce. (*Wisconsin and the Agricultural Economy*. 2004. Steve Deller, University of Wisconsin.)

**Reasons to invest in Wisconsin’s food and fiber industries**

- The food and fiber processing industry includes thousands of tax-paying corporations.
- Exports and sales outside the state: 86.25% of dairy products are sold outside of Wisconsin.
- Agriculture supports a variety of industries such as processing, genetics, equipment, manufacturing, transportation, storage, packaging, tourism and energy.
- Wisconsin has natural advantages for agricultural production such as access to fresh water and a good growing climate; with 10 million acres of land currently in cropland.
- A world-renowned university and technical college infrastructure that has a significant reputation in food science and agricultural research.
- The good growing climate and soil types allow a diversity of crops and livestock to be produced.
- Wisconsin’s geographic location and proximity to population centers provide an advantage for markets, shipping and transportation.
- A rich cultural heritage based on agriculture and the widely known America’s Dairyland image.
Agriculture in the Rock River Basin  
(See color maps on inside front and back covers.)

The following agricultural statistics include countywide figures from Fond du Lac, Green Lake, Washington, Dodge, Columbia, Waukesha, Jefferson, Dane, Green, Rock and Walworth Counties, though parts of several counties may fall outside the Rock River Basin. In 2002, the counties of the Rock River Basin accounted for 3,106,436 acres in farmland, 19% of the state total; 15,719 farms, 20.3% of the state total; and $1.37 billion in agricultural product market value, 24.4% of the state total. The market value of agricultural products in these counties has increased by 8.7% since 1997. (2002 Census of Agriculture)

Dane County led the state in total value of all agricultural products sold in 2002, Dodge County was 4th, Fond du Lac County ranked 6th and Jefferson was 12th.

A wide range of agricultural products are produced in the basin. The next section lists the products in which basin counties ranked between first, second or third in the state in acreage, production and market value.
Agricultural Commodity Rankings in the Rock River Basin

2002  Market value of crops sold including nursery and greenhouse: Dane #2
2002  Sales of grains and oil seeds:  Dane #1, Dodge #4
2002  Sales of milk and dairy products:  Fond du Lac #2
2003  Milk production:  Dane #4
2002  Market value of livestock, poultry, and their products:  Dane #1
2004  Production of all forage and hay:  Dane #4, Green #5
2004  Production of corn for grain:  Dane #1, Rock #2, Columbia #4
2004  Production of corn silage:  Dane #1, Dodge #6
2004  Production of wheat:  Fond du Lac #2, Dodge #3
2004  Production of soybeans:  Rock #1, Dane #2, Green #5
2002  Acres of soybeans:  Rock #1, Dane #2, Dodge #3
2003  Production of peas:  Fond du Lac #3, Rock #4
2004  Production of sweet corn:  Fond du Lac #4, Dodge #5
2002  Sales of nursery, greenhouse, floriculture, and sod:  Jefferson #1, Washington #3
2002  Value of tobacco sales:  Dane #1, Rock #2
2004  Number of all cattle and calves:  Dane #4, Dodge #5
2004  Number of hogs and pigs:  Dodge #3, Dane #4
2002  Number of laying hens:  Jefferson #1, Walworth #2, Dodge #3
2002  Value of horse, pony, mule, donkey, and burro sales:  Dane #2
2002  Value of sheep, goats, and their products sold:  Columbia #1
2002  Number of ducks:  Columbia #2

2002 figures are from the 2002 Census of Agriculture.
2003 figures are from the 2004 Wisconsin Agricultural Statistics booklet.
2004 figures are from the 2005 Wisconsin Agricultural Statistics booklet.

Agricultural production and jobs contribute immensely to the economy of Wisconsin. Favorable soils and growing conditions, proximity to markets, environmental benefits, and recreation and tourism potential point to the need to keep agri-business strong in the Rock River Basin.
What is Prime Agricultural Land?

A-1, Class I, prime land, are they all the same? When talking about agricultural land and zoning, each of these classifications has a different meaning. Designations involving a letter and a number, such as A-1, are zoning classifications. Classifications vary among counties but “A” generally stands for agriculture, “R” for residential and “C” for commercial. The A1 Exclusive Agricultural District zoning classification generally means that this land is zoned exclusively for agricultural production and associated facilities such as the farmer’s own home and associated barns, sheds, silos and the like. A-1 has nothing to do with soil type or prime land; it is simply a zoning classification.

Soil capability classes, such as Class I through Class VIII, relate to soil characteristics. Soil classes for each county are defined in the Soil Survey for that particular county. Soil Surveys are available free from county Natural Resources Conservation Service, Land and Water Conservation Departments and are also available on-line. The county soil surveys map all the soils in the county, listing their names and characteristics for agriculture, building, conservation, recreation, construction materials, water resources and more. Capability classes and sub-classes show, in a general way, the suitability of soils for most kinds of field crops.

**Class I** has few limitations (such as erosion, wetness, shallow or stony) to crop growth;

**Class II** soils have moderate limitations for crop growth and require moderate conservation practices and;

**Class III** above soils have severe limitations for crop growth or may require extensive conservation practices.

The term “prime agricultural land” may mean something slightly different in each county. Jefferson County, for example, has defined “prime land” as those soil types that are identified within the Soil Survey of Jefferson County, Wisconsin as Class I and Class II and also Class III soils that exhibit prime agricultural capabilities based on comparable expected yields to Class I and II. The soils with the least limitations for crop growth and yields are generally considered “prime agricultural soils.”
The Tension between Prime and Poor Soils, Development and Agriculture

It is overly simplistic to say that all prime soils should be preserved for farming and development can only occur on the poorer soils. Several issues concerning development on non-prime soils bear discussion when making land use decisions:

- Some farmers have very little or no prime soils (as defined by their county) and have adapted their farming operation to a less desirable soil type. Through conservation measures and an appropriate selection of crops and livestock, they can run a successful operation.

- Prime soil types in Capability Class I are often the most level soils and most desirable for both farming and development. Construction on level sites generally incurs fewer costs than construction on steep slopes. An example of this situation is on the east side of Janesville where some of the most productive soil in Wisconsin is being subdivided.

- Steep slopes are often desirable for residential housing because of the views. These areas are often picturesque and unique and also desirable for public parks and open space for the enjoyment of all. Building on steep slopes can cause excessive erosion and increase the speed and volume of run-off resulting in habitat destruction and downstream flooding. The Jefferson County Land Use Plan suggests restricting development on slopes greater than 20%.

- Construction on Class III through Class IV soils may have negative impacts on the environment and increase construction costs. These soils may be located on steep slopes or in wetlands or have other unstable characteristics. Depending on the soil type and its location in the landscape, building on these soils may cause severe erosion, building failure, surface water pollution, and groundwater contamination in areas of fissured bedrock.

There is no “ideal” soil type or location for farming or development. Each community needs to weigh the costs and benefits of each land use decision.
Section III: Concerns with Rural Development and Benefits of Focused Development

Development in rural areas is a problem for many reasons. The RRC Planning the Rock Issue Team has organized these reasons into two categories:

- Domino Effect of Urban Fringe and Scattered Rural Development
- Higher Cost of Providing Government Services to Fragmented Development

The Coalition has also provided numerous benefits communities could reap by following these guidelines. These have been organized into three categories:

- Environmental Benefits of Focusing Development Adjacent to Existing Development
- Agricultural Benefits of Siting Development Adjacent to Existing Development
- Community Benefits of Siting Development Adjacent to Existing Development

The concerns listed can be addressed by strong growth management ordinances and policies.

“Fifty years ago, the problem was convincing a public that had mostly grown up on farms that there was value in preserving what seemed like an endless countryside. Today, we are a majority suburban nation and the problem is instilling reverence for the cities we have left behind. The natural movement needs to treat cities with the same reverence as natural areas. The movement should not abandon its dedication to the preservation of wilderness but should add to it—with equal dedication—an affection for cities.”

Farms & Neighborhoods—Keeping Both Strong
A Dane County Executive Design Dane! Initiative, July 2000.

Domino Effect of Urban Fringe and Scattered Rural Development

Scattered rural development can have a domino effect. Once one farmer decides to sell, others want to sell. After the initial sale and development approval has occurred, the precedence of approving a subdivision, not connected to municipal facilities, can be used successfully as the justification for approving the next subdivision. The presence of a rural home becomes the justification for approving the next. Developers are then drawn to areas where it is easy to acquire land and permits. Construction of roads leads to more people, which lead to more road construction and improvements. Construction of high speed roads increases access to rural areas for new residents, which in turn leads to more road construction and improvements.

Farming becomes more difficult when patchwork residential development on the poorer soils or on hills is allowed due to increased traffic, crop damage, trash in fields, trespassing and crop vandalism and objections from new neighbors about noise and odors.

Farm support services such as equipment sales and repair, feedmills, and other services decrease as their agricultural business base decreases. The remaining farmers must drive further to get materials or services. Another factor adding to the decline in farming where development is occurring is the increase in land values, making it more difficult for farmers to purchase land for production or to rent land for the long-term.
Higher Cost of Providing Rural Government Services

Expanding the tax base by promoting rural developments may seem to lead to greater income for townships, cost of providing town services and prevent tax increases. However, the opposite may occur. The expectations and demands for governmental services by the growing population can force local governments to consider expanding their services. The cost of providing governmental services to a dispersed population may be greater than will be recovered in new tax base revenues. According to a 2000 UW-Extension study referring to nonfarm rural residences; it costs between $1.01 and $1.30 to provide services for every dollar generated in revenue. (Ewards, et al. WLURP Report #2 May 2000). It should be pointed out that other UW-Extension studies do challenge the accuracy of these types of “costs of services” ratios. However, these studies can alert town government officials and residents to the potential ramifications of their decisions, and move them forward in thinking about alternative ways to develop, or to not develop. Each community should analyze their unique conditions regarding cost of services and other local impacts of decisions to allow or promote scattered rural development.

Examples of fiscal and non-fiscal impacts of scattered rural development:

• **Higher road construction cost and maintenance costs**: A larger and dispersed rural population will require more and better roads. Greater cost will be incurred to repair or improve roads, culverts and bridges. The cost of maintaining older substandard roads will increase with more cars on the road. With increased traffic there will be greater demand for safer roads (i.e. more snowplowing and salting, more guardrails, straightening of hazardous corners, increased signage, warning lights on railroad crossings). A larger non-farm population will likely want improved bike safety with wider paved shoulders.

• **Higher utility construction and maintenance cost**: Storm related utility repair costs are higher with a dispersed service area. Cost for refuse pickup can increase as travel distance and number of pick-ups increase. Additionally, in the Rock River Basin, an average of 13% of the rural wells have nitrate levels above the enforcement level while other areas have high arsenic levels caused by the draw down of groundwater levels. Septic systems in rural subdivisions may contaminate groundwater under certain situations. If groundwater quality becomes a local concern, the cost to provide public water to scattered development is very substantial.

• **Greater demand for police, fire protection and emergency response services**: House damage in fires increases significantly due to lack of water and longer response time. Medical emergencies are more likely to result in fatalities due to length of response and travel time to hospital. As the population of rural non-farm residences increases and the number of rural residents accustomed to urban services increases, town governments will be asked to provide protective and emergency services similar to those provided in urban areas.

• **Greater school bus transportation costs**: School bus transportation costs are higher per pupil due to greater travel distances with a dispersed population. Often children face early bus pickup times, late return times and long bus rides. Student involvement in after school activities and part-time employment results in increased use of automobiles.

• **Increased neighbor conflicts**: Rural non-farm development will result in greater conflicts between residential and farm neighbors. Resolution of conflicts will require additional time and costs for town governments to resolve.
Environmental Benefits of Locating Development Adjacent to Existing Development

- Reduces loss of wildlife habitat, fragmentation of woodlots and forests, and environmental corridors. Many species cannot tolerate extensive human activity or may require larger contiguous blocks of habitat for breeding/feeding. Scattered rural development often is located in or adjacent to habitat required for migration, breeding, resting or feeding. Development in these areas can disrupt mating patterns, cause genetic isolation weakening species, and displace species with low tolerance for human activity.

- Maintains open space, green space and scenic vistas by protecting larger, uninterrupted contiguous blocks of agricultural land, forests and wild areas.

- Maintains open space necessary for hunting, hunting safety and other recreational opportunities. Scattered development tends to diminish hunting opportunities and other recreational activities such as snowmobiling.

- Reduces roads, ditches and culverts necessary to service developing areas, resulting in less negative impact on stream flow, water quality and infiltration caused by additional impervious surfaces.

- Reduces air pollution with fewer motor vehicle emissions due to shorter commuting distances. Mass transit may also be feasible with greater population density and close proximity to existing population center.

- Reduces potential for introduction of exotic nuisance species. Building homes and increasing traffic can allow non-native species to become established in woodlots or other natural areas.

Agricultural Benefits of Siting Development Adjacent to Existing Development

- An adequate base of agricultural land must be maintained to a) produce food crops required to feed our population in the future, b) support local agriculture related business and c) produce raw products near manufacturing facilities. If agriculture declines in an area, there will not be adequate business to maintain the farm support businesses. Cost of agricultural production will increase if remaining farmers have to travel farther for services and markets.

- Good planning for development reduces loss of prime agricultural land.

- Farming operations and farm related industries are often incompatible with residential development. DATCP receives the greatest number of complaints each year from non-farmers about odor and noise. Ordinances and regulations addressing concerns of residential property owners may restrict or interfere with farming and farm industry operation.

- Combination of commuters, residential and service delivery traffic on the road along with slow-moving farm equipment is dangerous.

Lakeshore Development an Exception

Throughout Wisconsin, lakes and rivers are increasingly threatened by residential development. In southern Wisconsin, rivers are seeing increased development pressure and few buildable lots are available on lakes.

Many times a smaller house or cottage is purchased and replaced with a much larger home. This increases the impermeable surfaces, increasing the amount of runoff entering the water.

The Rock River Coalition does not support increasing development near lakes and rivers without adequate environmental protection measures.
Community Benefits of Siting Development Adjacent to Existing Development

- Efficient and cost-effective utilities and services.
- Cities support a range of transportation choices such as public transportation and bicycle and walking paths, which can reduce the need for parking in the city center.
- Shorter driving distances to school, work, shopping and recreation; preserving resources.
- Shorter emergency response times.
- Wide range of housing choices and costs.
- Discernable edges of the community contribute to a sense of place or character in both the city or village and the countryside.
- When communities grow in size they typically offer a wider range of cultural opportunities, stores and restaurants.
- Greater variety of jobs due to a more diverse economy.
- Mixed-use zones consisting of a combination of residential and commercial are convenient and economical.
- Walkable opportunities increase leading to healthier lifestyles and less obesity.
- Increased population diversity in terms of age, family size and income levels.
- Opportunities for in-fill development to more efficiently use land resources.
- Designated and accessible public open space that preserves environmental corridors.
- Agricultural or open lands between communities helps to maintain community identity.

Concerns with Focusing Development Near Existing Development

- Many small hamlets and communities feel additional development will change their character.
- Public services such as sewerage and water may not be available or may be at or near limit.
- Many people want a country home.
- Increasing likelihood of border disputes and a greater need for boundary agreements due to annexation issues.
Section IV:  

Protecting Agriculture as an Asset to the Basin

Farmers sell land for a variety of reasons. Rural lots and land for development bring a higher price than other farmers can pay and still remain profitable. Here are a variety of ways to increase farm cash flow and compensate farmers for not selling for rural development. These methods have been organized into three categories:

1. Direct incentives or payments
2. Methods to make farming more profitable
3. Regulatory methods that support farming in the community

Regulation is the foundation of a strong growth management plan. However, the RRC feels a mix of implementation methods is a better solution than regulation alone. The reason for this belief is:

• Landowners are frequently interested in maintaining their land as farmland or for conservation but can’t afford not to sell it.

• Fairness: asking society to share in the cost of preserving land for environmental purposes, groundwater recharge, wildlife and open space rather than on the backs of farmers.

• Everybody’s needs are being met to some degree.

• Funds provided as compensation can be reinvested in the farm.

• Younger farmers are able to get started: cheaper land means less debt. Conversely, retiring farmers need to have their long-term financial needs met.

• History shows that an economic solution to the land use problem is better than a regulatory solution.

MORE HELP: Washington County has put together a comprehensive Farmland & Open Space Preservation Tools Manual. We’ve included it on a cd, in a pocket on the back page of this manual. It’s also available at www.co.washington.wi.us. Their manual builds on this one and provides greater detail for many of these tools. UW-Extension has also developed a number of research-based fact sheets on these methods. They can be found at www.uwsp.edu/cnr/landcenter/publications.

Another source of information on tools is Farmland Information Center a partnership between the American Farmland Trust and NRCS. www.farmlandinfo.org/
Methods Using Direct Payments or Incentives

These are ways to encourage restricted land use to preserve farming or good environmental practices. Some directly compensate farmers through payments or tax deductions such as purchase of agricultural conservation easements and transfer of development rights while others place the financial incentive on the development community such as cluster bonus. Mitigation policies permanently protect land in proportion to land that is developed and can involve landowner compensation.

Not all of these methods are unilaterally endorsed by the committee for all areas of the basin. Method selection and use must be based on the needs and unique features of the community. The question of how to manage development is an important decision for local citizens and their elected representatives to make.

a) Purchase of Agricultural Conservation Easements (PACE) and Purchase of Development Rights (PDR)

PACE programs use tax revenue or other funds to pay the landowner to permanently remove the option for development from all or part of their land. The “conservation easement” is the legal document that sets forth the development restrictions on a parcel of land and transfers with the deed to subsequent owners. This concept is often called “purchase of development rights” in Wisconsin. Agricultural conservation easements are designed specifically to protect farmland. The landowner retains ownership and the right to use the land for farming and other purposes that do not interfere with or reduce agricultural viability. They hold title to their properties and may restrict public access, sell, give or transfer their property, as they desire. Conservation easements limit land to specific uses and thus protect it from development. Agreements are voluntary and are created between private landowners and qualified land trusts, conservation organizations or government agencies. Conservation easements can also protect wetlands, woods and natural areas. Purchase of conservation easements is attractive to farmers because they are a way to directly compensate farmers for not developing their land. The farmer may then use the money to invest in the farm operation, for retirement savings, for education, or any other purpose. Some landowners are able to donate a conservation easement to a non-profit conservation organization. The landowner gets the satisfaction of knowing their land will never be developed and an income tax deduction.

Case Study: Town of Dunn, Dane County

The Town of Dunn is located just south of the City of Madison and east of the City of Fitchburg within sight of the State Capital and on the shores of Lake Waubesa.

On April 22, 1997 (Earth Day) the Town of Dunn protected its first property, the Sinaiko Farm (see pictures), under its purchase of development rights program. The program was funded by a 50-cent assessment per $1000 equalized valuation that the taxpayers approved by referendum in 1996. Since that time, the Town of Dunn has protected 1763.58 acres and has a waiting list of 26 landowners. Funding has come from the assessment, $1.46 million in grants from the USDA Farmland Protection Program, and matching grants from the DNR Stewardship program and Dane County Conservation Fund. The National Heritage Foundation, a land trust, reviews and approves the projects and is the easement co-holder and co-signer. This arrangement is useful for enforcement should politics in the township change in the future. In April 2000, electors approved a $2.4 million bond issue, totally funded by the previous assessment and adding no new taxes, to continue the program. Visit: http://www.town.dunn.wi.us for more information.
b)  **2002 Farm Bill Working Lands Conservation Programs**

The USDA has several conservation programs that directly compensate farmers for installing streambank buffers, restoring grasslands and creating wildlife habitat. Compensation for permanent easements are available in some of these programs and installation costs are either cost shared or 100% compensated. Compensation rates vary between counties, according to soil type. Contact your local USDA Farm Service Agency or Natural Resources Conservation Service for details.

c)  **Working Lands Initiative**

The Working Land Steering Committee is due to release recommendations for farmland and forest preservation in Wisconsin in July 2006. The goals for the Initiative include:

- Maintain healthy forestry, agriculture and tourism sectors
- Grow the forestry and agriculture sectors
- Provide new tools to counteract fragmentation and parcelization of forest and agricultural land
- Work with housing and business development sectors
- Preserve and showcase historic and tourism assets
- Stimulate value added economic opportunities and value chains
- Stimulate local ownership and cooperatives in the bio-economy
- Reach across traditional town, village, city, and county jurisdictions
- Forge new public and private partnerships
- Educate and engage the public in developing the vision for their community
- Seek additional federal and state funds to meet these goals
- Seek a state vision and leadership for the future of working lands

d)  **Density Bonus or Cluster Bonus**

Zoning ordinances that encourage clustering allow or require houses to be grouped close together on small lots to protect open land. The portion that is not developed may be restricted by a conservation easement. Cluster zoning has been used more successfully to preserve open space or to create transitional areas between farms and residential areas than to protect farmland. It is often used to create “conservation subdivisions.” As used here, instead of a requirement, landowners would receive a tax credit for ‘clustering’ or for developing land adjacent to existing development. (Dodge County is one Wisconsin county with a density bonus in its ordinance.)
Methods to Support Agricultural Profitability

Municipalities can help reduce costs, frustration, time commitments and other barriers for farmers that can help increase agricultural profitability. They can:

- Support farmer education classes and training programs provided by University of Wisconsin-Extension or the local Technical College.

- Partner with the agricultural community and others to support market research studies identifying value-added and/or niche market opportunities that also demonstrate environmental stewardship.

- Provide assistance to landowners for the development of new cooperative services, i.e. manure composting, methane generation or manure brokering.

- Create methods to expedite permits for critical agricultural businesses. Requirements for achieving expedited status would be established in advance and agreed upon by the community.

- Economic development councils could focus efforts on agriculture, especially those businesses that increase agricultural sustainability: marketing, manure, fertilizer and nutrient management.

- Encourage unique opportunities for agricultural related businesses (value added)—provided environmental concerns are addressed. Some of these are very controversial and need total community input. We have included a detailed discussion of the following in Appendix A.
  - Wind farms
  - Ethanol and other biofuels
  - Cellular towers
  - Livestock facility siting

a) Voluntary Agricultural Districts (VAD)

Voluntary Agricultural Districts provide a series of benefits to farmers willing to restrict nonagricultural development for 10 years. They also raise public awareness of agricultural activities, support the continued viability of local agriculture and help government officials identify active farming communities. In North Carolina 200,000 acres are enrolled in 39 counties. The program was created by the state legislature and is administered on a county level by a board that includes local farmers. The legislation provides farmers with additional conservation cost-share assistance and priority for future state benefits. It also allows them to sell some non-farm products and maintain their agricultural zoning exemption. Some counties inform new residents that they are purchasing land near a farm in the program and what farm activities they should expect. (North Carolina Voluntary Agricultural Districts: A Progress Report, 2004)
Creative Incentives to Keep Farmers Farming

Farmers may have financial pressures or concerns for the future. A community may be able to develop creative programs as a cost effective means of keeping land in agriculture. Coverage could be based on an agreement to keep land in agriculture. Some of these ideas include:

**Education Fund**
College/Technical School Tuition: At the state or possibly county level, tuition could be paid for designated family members (the farmer, spouse and other close relatives) for either a specified amount and/or number of years.

**Farm Management and Retraining Assistance**
A stipend is paid to farmers who complete additional training in farm management or vocational training of the farmer who must then maintain their land in open space or agriculture, even if they no longer farm it themselves.

**Life Insurance**
A life insurance policy for an agreed upon amount could be provided to the landowner that, upon the demise of the landowner, would help provide the financial legacy the landowner would have otherwise provided through sale of the family farm.

**Long-term Care or Health Insurance**
Many farmers, or their spouses, work off the farm in order to have health insurance. By providing either health care or long term care, their focus is likely to stay on farming.

**Disability Insurance**
Disability insurance could be provided to the landowner that would provide a stable, agreed upon level of funds to the landowner if he/she should become disabled and unable to perform work for a wage.

**Local Brands**
Economic development interests such as Economic Development Councils and farm organizations could develop a regional brand that identifies and promotes locally grown products.
Zoning: Is it a Tool for Agriculture or Open Space Preservation?

Zoning is the most commonly used means of regulating land use in the United States. Some form of zoning exists in most municipalities in the nation. It is a major tool for implementing land use plans.

Zoning regulations typically define districts by uses and intensity. They include specific land uses allowed in each district along with a map of zoning districts, and a procedure for people to interpret these elements for individual cases. Zoning regulates the use of land, lot size and the configuration of structures. Special zoning programs in Wisconsin include exclusive agricultural zoning, floodplain zoning and shoreland and wetland zoning.

Benefits of Zoning:
Agricultural zoning is the most widely used technique for a “baseline” level of farmland protection. Zoning represents a foundational layer of farmland protection by helping to keep conflicting farm and nonfarm land uses separate. It also can help prevent the fragmentation of farmland into parcels too small to farm. In general, zoning can be an effective regulatory tool for preserving land resources and urban containment.

Zoning Limitations:
Zoning, by itself, cannot always be depended upon to protect and preserve open space. If a zoning ordinance is weak or ineffective, it is often easy to obtain a variance from the provisions of the ordinance.

The administration of zoning ordinances lies in the hands of zoning administrators and elected and appointed officials. Elected and appointed officials are not generally involved enough with the zoning ordinance to understand and remember all its complexities. Even among well-intentioned administrators biases, errors and prejudicial judgments can occur, resulting in differential enforcement.

Sometimes the unsuitability of soils for development, for example: in wetlands, shallow soils, high bedrock and steep slopes, might keep such land open. But even in these cases, adjacent land that is appropriate for agricultural use needs stronger protection from development than just zoning laws. Zoning maps are subject to errors, and those based in part on soil suitability are subject to soil survey errors. Zoning maps may sometimes be subject to border disputes between adjoining municipalities with disagreements as to where one district begins and another ends.

Attempts to provide open space through zoning can result in a "taking" challenge where landowners may contend that they have been deprived of any practical use of their property.

In Wisconsin, where state laws governing zoning are relatively weak, it is essential that local ordinances are well crafted and utilize strong, clear language.
Wisconsin’s Smart Growth Law:

In 1999 Wisconsin adopted what was known as ‘Smart Growth’ legislation. The legislation provided a framework for local government units to develop comprehensive plans. It also provided a grant program to serve as an incentive for local governments to get started on plans, which need to be adopted by 2010. The framework for comprehensive plans requires that certain elements be addressed in the plan. These include background information; housing; transportation; utilities and community facilities; agriculture, natural and cultural resources; economic development; inter-governmental cooperation; land uses and implementation. Policies, goals and objectives must be developed for each element. The legislation fosters public participation in the planning process through open discussion, information sharing and public meetings.

Smart growth legislation promotes, but does not require traditional neighborhood development and conservation subdivisions. Traditional neighborhood development is defined as a compact, mixed-use neighborhood of residential, commercial and civic uses. Conservation subdivisions are defined as housing in rural settings on compact lots with common open space, which preserves the natural land features to the extent possible.

Plans adopted under Wisconsin’s smart growth legislation differ from previous public plans in that they are required to be adopted by ordinance. Adoption of the plan by ordinance means that it becomes enforceable and cannot be ignored as so many plans have been in the past. If the local unit of government which has adopted a plan as an ordinance decides to approve development which is not in accordance with its plan, it must amend its plan to accommodate the development in order for the non-conforming development to be legal.
**Regulatory Methods that Support Farming**

Municipalities can use several innovative methods to help support farming, including adopting ordinances, implementing fees, transferring development rights and other practices. Here are some examples:

**a) Agricultural District**

Agricultural district laws allow farmers to form special areas where commercial agriculture is encouraged and protected. The law provides incentives such as automatic eligibility for differential assessment, protection from eminent domain and municipal annexation, enhanced right-to-farm protection, exemption from special local tax assessments, and eligibility for state Purchase of Agricultural Conservation Easement programs.

**b) Agricultural Protection Zoning (APZ)**

Agricultural protection zoning ordinances designate areas where farming is the primary land use and discourage other land uses in those areas. APZ also restricts the density of residential development in agricultural zones. The agricultural land base is stabilized by reducing the likelihood of conflicts and maintaining a “critical mass” of agricultural land. “No net loss of farmland” policies prohibit the conversion of land in APZ unless an equal amount of agricultural land of the same or better quality is added.

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**Agricultural Alternatives**

Many farmers assume that increasing animal numbers will automatically result in increased profitability. However, the first step for individual farms to increase profitability is to fine tune productivity and financial management decision-making.

Many farmers have found economic success by looking for alternate strategies that have few environmental impacts, if managed correctly.

- Intensive Rotational Grazing
- No Tillage Farming Practices (reduces machinery needs, time and energy)
- Organic Farming
- Farm Tours
- Bed and Breakfast
- Specialty Markets
  * Specialty soybeans for tofu or blue corn for chips
  * Specialty cheese: raw milk, sheep & goat
  * Seasonal crops such as cut flowers or pumpkins and gourds
  * Industrial hemp (if it becomes legal)
- Local Direct Marketing (promoted in the Rock River Basin by Michael Fields Institute and Town & Country RC&D)
c) Conservation Subdivision Ordinance

Some municipalities require all new subdivisions to be designed using a conservation design. Typically this requires homes to be clustered in specific areas of the subdivision, leaving environmentally sensitive areas in public ownership either by the subdivision association or the appropriate government. Conservation subdivisions usually manage stormwater in a regional design approach rather than property-by-property. A model Conservation Subdivision Ordinance has been prepared by the state as part of the Smart Growth Initiative. (UWEX, Ohm 2002)

d) Green Tier

Green Tier is a program designed to help environmentally responsible companies achieve both environmental and economic gains. A Green Tier Charter between a developer, the DNR and a municipality will provide better environmental controls while allowing permits to be processed sooner. As of December 2005, Veridian Homes signed a Green Tier charter for areas in Dane County. Wisconsin Builders Association’s Development Council is also developing a Green Tier Charter.

e) Density Bonus for Animals

Counties may limit the number of animals that can be raised on a parcel of land through a permit system. A “density bonus” would allow a producer to have more animals, when appropriate environmental measures are taken. The density bonus threshold would be described in the applicable zoning code. See ‘Large Dairy Operation’ discussion in the Appendix.

f) Development or Impact Fees

A fee is paid by a developer based on increased services that will need to be provided to the new residents. These can be adjusted according to distance or number of residences. This is a disincentive for development in agricultural areas. Impact fees are highly regulated and can only be used for certain specific purposes.

g) Mitigation Ordinances and Policies

Mitigation ordinances make developers pay for farmland protection by requiring developers to permanently protect farmland for every acre of agricultural land they convert to other uses, usually by placing a conservation easement on farmland in another part of the municipality.
Case Study: Highway 12 Agreement in Dane County

Mitigation is being used in the Highway 12 reconstruction corridor between Middleton and Sauk City. An agreement was reached in March 1999 that allowed highway expansion to move forward in exchange for $15 million for protection of natural resources in the Baraboo Hills and $500,000 for planning in Sauk and Dane Counties. Dane County Executive Kathleen Falk explained: “Working with DOT, communities and conservation organizations, we can use these funds to buy, for example, development rights so farmers can stay in farming and prevent sprawl, and we can purchase key segments of the Ice Age Trail or add on to some of our best county parks in the area” (Capital Times, March 10, 1999). The Sauk County Purchase of Development Rights program to implement key provisions of the agreement was initially funded with $5 million from the agreement. The Nature Conservancy also receives matching funds from the settlement to fulfill the agreement and works with a multitude of partners to do so. (The Nature Conservancy Wisconsin Chapter, Winter Newsletter 2002-2003) As of August 2005, $500,000 for planning in Dane and Sauk Counties has been used. In Dane County the five townships that have USH 12 within their jurisdiction used their money to complete Smart Growth plans. In Sauk County the money was used to develop a corridor plan, which involves all municipalities. This plan has been finalized and the communities will work together to plan future development.

Of the $5 million available to Sauk County for protection of the Baraboo Hills, $3.7 million has been spent and has provided protection of 2,700+ acres. Dane County received $5 million for purchase of development rights. Dane County is now in the process of identifying lands they wish to protect for both natural resources and agriculture.

The Nature Conservancy has protected an additional 2,031 acres, of which 1,365 are being used to release $2.5 million of DNR Stewardship funding that will be used by the DNR and NGO’s that receive grants to purchase additional lands (fee or easement) in the Baraboo Hills.

h) Right to Farm Legislation and Statement

All 50 states have at least one right-to-farm law intended to protect farmers and ranchers from nuisance lawsuits. These laws are a state policy assertion that commercial agriculture is an important activity and support the economic viability of farming by discouraging neighbors from filing lawsuits against agricultural operations.

i) Transfer of Development Rights (TDR)

This program allows landowners to transfer the right to develop one parcel of land to a different parcel of land. TDR can shift development from agricultural areas to areas planned for growth. The farmland is restricted with a permanent agricultural conservation easement. A developer purchasing development rights is often allowed greater density development as an incentive, which increases profitability. For example, the Town of Cottage Grove, east of Madison, has completed one TDR transaction. These transactions require that a city or village work cooperatively with surrounding farmers to accomplish their goals. Montgomery County, Maryland, near fast growing Washington, D.C., established its TDR program in 1980. Agricultural activities occupy about one-third of Montgomery County’s land area. Over half of the 93,000-acre agriculture reserve is preserved through transfer of development rights or easement purchase initiatives. The County has preserved 64,998 acres as of June 2005. Prior to 1980, the county lost an average of 3,500 acres of farmland per year to development. In the first decade following the establishment of the TDR program, the county lost a total of 3,000 acres to development, a drop of approximately 92 percent. The County has 577 farmers, of which 50% of them work full time in farming. (Montgomery County Department of Economic Development Agricultural Services: www.montgomerycountymd.gov/agstmpl.asp?url=/content/ded/AgServices/agfacts.asp)
Section V:  **RRC Policy Summary**

Nestled throughout this document are suggestions for governmental policies. Below we have summarized those policy recommendations. We believe that, as appropriate, communities or the state should adopt the following policies:

1. Communities should protect rural agricultural land and open space by:
   
   a. Allowing subdivision development only in areas adjacent to existing developments.
   
   b. Locating subdivisions adjacent to existing sewer services and utilities.
   
   c. Enforcing the wetland preservation rules in cities as well as rural areas.
   
   d. In general, not allowing new development near lakes and rivers.
   
   e. Guiding the location of rural housing through strong land use plans, farmland preservation plans, agricultural protection zoning and zoning ordinances.
   
   f. Identifying agricultural districts or farm priority areas and developing a plan for locating agricultural support businesses.
   
   g. Developing Purchase of Agricultural Conservation Easements, Purchase of Development Rights programs. They should work with land trusts to protect threatened and ecologically sensitive lands.

2. Subdivisions should utilize development principals to protect groundwater quality, retain groundwater infiltration, manage storm water and preserve wildlife habitat.

3. Municipalities should modify plans and zoning regulations to allow for a variety of setbacks, street widths and density standards to support conservation subdivision and traditional neighborhood design.

4. Counties should partner with the agricultural community and others to enhance economic profitability by supporting market research studies identifying environmentally sound value-added and/or niche market opportunities.

5. Economic development interests such as Economic Development Councils and farm organizations should examine the feasibility of a regional brand that identifies and promotes locally grown products.

6. Counties and towns should support affordable health care for rural farm families.

7. Counties and towns should develop methods of expediting farm permits, providing environmental standards are met.
**The Rock River Coalition** is sharing this document with elected officials, planners and others interested in good land use in the basin at meetings and presentations. The team will continue to work toward sound land use through education and partnerships. Anyone is welcome to join the team. Future activities are likely to include roundtables for professional planners in the basin to share their experiences, and workshops on conservation or low-impact subdivision design.

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**For More Information:**

Any group who would like a presentation on these principles can contact the RRC at 920-674-7443 or at river@excel.net or can contact Suzanne Wade, UWEX Rock River Basin Educator at 920-674-8972 or at Suzanne.wade@ces.uwex.edu.
Section VI: Resources

Most of these resources are available from the UWEX Rock River Basin Educator: 864 Collins Rd., Jefferson, WI 53549, 920-674-7297.


American Farmland Trust, Tools Available in Wisconsin to Protect Farmland, Material compiled from the website, http://www.farmland.org/.

American Farmland Trust, “Partnering to Save Farmland”, American Farmland, Fall 1999.


Citizen Participation Team, Citizen Participation and Smart Growth, University of Wisconsin Cooperative Extension 2001.


RENEW Wisconsin, Michael Vickerman, Executive Director, [www.renewwisconsin.org](http://www.renewwisconsin.org), information on renewable energy.


*USDA Census of Agriculture*, 2002.

University of Wisconsin Program on Agricultural Technology Studies, Agricultural Land Use Maps, [www.wisc.edu/pats](http://www.wisc.edu/pats).


Wisconsin Department of Administration, State Energy Markets Bureau, Alex Betillis – model ordinance.


Wisconsin Department of Natural Resources (WDNR), *Internet Tools for Planning, Conservation, and Environmental Protection*, fact sheet 2006.


Wisconsin Department of Natural Resources (WDNR), *Upper Rock River Watershed Management Plans*, April 2002.


Wisconsin Division of Energy, PO Box 7868, Madison, WI 53707-7868, *Wind Energy*.


**APPENDIX**

**Wind Energy**

Alternative sources of fuel are changing the landscape in Wisconsin. As of July, 2004, five wind farms were active in Wisconsin with eight more proposed. The 20 turbines near Montfort in Iowa County along Hwy 18 with their 110-foot blades are imposing structures, which even attract tourists. The approval process at Montfort ranks “as one of the warmest welcomes ever bestowed on a wind power project in the US” according to Michael Vickerman, executive director of RENEW. (Alliant Energy News, Alliant Energy-WP&L Contracts for Additional Wind Energy from FPL Energy’s Montfort Wind Farm, [www.alliantenergy.com](http://www.alliantenergy.com), 6/19/01).

However, wind farms proposed in or near the Rock River Basin haven’t been as well received mostly due to concerns about migrating birds, a major bat hibernaculum, the visual impact from the Horicon Marsh and the number of rural residential homeowners in the area. According to a presentation by Rick Benas, Saratoga Associates at a December 2005 national wind conference, wind farms should not be sited within visual proximity to aesthetic resources of national, state or local significance. [http://www.nationalwind.org/events/siting/presentations.htm](http://www.nationalwind.org/events/siting/presentations.htm)

Wind farms are clusters of wind turbines that generate electricity by converting wind kinetic energy into electrical energy. Wind farms are generally located in areas with reliably favorable wind speeds. According to a map by Wisconsin Wind Energy Potential ([www.baywinds.com/new/wiscpot.html](http://www.baywinds.com/new/wiscpot.html)), most areas in the Rock River Basin have a medium wind power potential (about an average annual wind speed of 13.5 to 15.5 miles per hour), where locally high hills or outcrops have the highest potential. Areas in the northern part of the basin have the most overall potential for wind farming.

Typically, a wind farm takes up only a very small amount of land, leaving the vast majority of the farmland available for agricultural use or left to the local flora and fauna. Each wind turbine uses about one quarter acre of land for the foundation and access roads. Turbines must be spaced about one every 5 acres in the Midwest to avoid creating turbulence ([Wisconsin Energy Center, Wind Power in Wisconsin](http://windpowerwisconsin.org), 2000). However, land use planning must also take into account the transmission lines needed to transport the electricity generated.

Advantages to wind turbines include being a source of renewable and clean energy. They do not generate air or water emissions, and do not produce hazardous waste. Tax payments are made to counties, local communities and schools. Landowners, usually farmers, receive lease payments thus diversifying the income generated by the farm ([Wisconsin Energy Center, Wind Power in Wisconsin](http://windpowerwisconsin.org), 2000). While wind turbines can provide extra income for farmers, they are only located where the company wants them. Farmers don’t compete for them. Therefore, not every interested farmer can look towards wind as an extra source of funds.

Concerns found during a survey of residents around the Kewanee wind farm included: flicker of the blade’s shadow, vibration through bedrock to nearby homes and interference with cell phones and TV reception.

Environmental impacts often cited are noise and bird mortality. Noise from the new larger turbines is generally about 50 decibels at about 300-600 feet. This compares to the sound of light traffic at a distance of 100 feet. A national estimate of bird mortality for a wind tower is 2.19 birds/year. Greater mortality has been seen where the local ecosystem was not taken into account during design and siting. Carefully locating the turbines out of migration routes or areas with endangered avian species, along with the slower speed of the blades should result in lower bird mortality. ([Focus on Energy: wind turbines and birds, 2003](http://focusonenergy.org))
As wind development has increased, opponents have raised claims that wind development will lower the property values within view of the turbines. A recent study looked at wind farms with a generating capacity of 10 megawatts (MW) or more that were installed in the U.S. from 1998 to 2001, and analyzed data from the projects for which there were enough sales or other data to support statistical analysis (10 wind farms). The study found no evidence that property values decreased as a result of the wind farms. In fact, the study found that “for the great majority of projects, the property values actually rose more quickly in the view shed than they did in the comparable community. Moreover, values increased faster in the view shed after the projects came on-line than they did before” (UW-Extension Draft Wind Energy Fact Sheet).

The type and amount of taxes paid by wind power projects depends on who owns the turbines.

**Taxation: Utility-Owned Wind Generation**

If wind turbines are owned by a company that qualifies for taxation as a utility under Chapter 76 of state statutes (it must sell at least 95% of its electricity and have a total power production capacity of at least 50 megawatts), the company does not pay property taxes. In lieu of local property taxes, the utility pays a license fee based on retail and wholesale electric sales. These taxes are deposited in the state’s general fund. The state makes a payment to local governments with utility property that is funded from the general fund. This payment, called the utility shared revenue payment, equals 9 mills times the net book value (original cost less depreciation) of qualifying utility property (for wind farms generally all buildings and equipment – land is never included). For property in a town, 3 mills is paid to the town and 6 mills is paid to the county. For property in a village or city, 6 mills is paid to the village or city and 3 mills is paid to the county.

**Taxation: Non-Utility Owned Wind Generation**

If wind turbines are owned by a company that does not qualify for taxation as a utility under Chapter 76 of state statutes, the property is subject to local property taxes. (An example is the wind farm of FPL Energy, LLC, near Montfort in Iowa County.) Under state statutes, those parts of a wind energy system which convert and transfer or store wind energy into usable forms of energy may be exempted from taxation by filing the appropriate forms with the local assessor. Equipment that would be included in a conventional power plant is not exempt from property taxes. Due to the nature of wind power systems, however, the entire wind power system is normally exempt. The land on which wind power turbines are constructed is not exempt, and thus subject to property taxes in the same manner as other taxable property (UW-Extension draft Wind Energy Fact Sheet).

A model wind turbine ordinance for local municipalities has been developed through funding by Focus on Energy. The UW-Extension is preparing fact sheets on addressing alternative energy facility development into local comprehensive plans and through land use regulations and other programs. These are expected to be completed in the summer of 2006.
In 1996, Congress passed the Telecommunication Act, which brought about the deregulation of the telecommunications industry. At this time, there are about six hundred competitive local telephone service providers—more than ten times the number of such providers at the end of 1995. Adding to this is the U.S. Government mandate requiring television stations to convert to digital television by the middle of the next decade. This increase in providers has led to an explosion in the number of cellular towers.

The number of cell towers is predicted to increase four-fold in the near future. While some hope satellite communication technologies will replace land-based towers, it appears unlikely at this time.

Some people have concerns about the aesthetics of the towers. Towers have been disguised as flagpoles, silos, rocks, trees and windmills. These efforts increase, possibly triple, the cost of tower construction. These camouflages are most effective with shorter towers carrying only one antenna, thus necessitating more towers. Co-location of several antennae located on a single tower reduces the total number of towers. Unfortunately, there are many obstacles to accomplishing co-location; namely, competitive providers are not eager to share facilities.

Public concern has arisen about the health effects of radio frequency (RF) emissions from cell towers. So far, no conclusive evidence of cell tower health hazards has been found. One study showed that cell phones held to the head emit one hundred times more energy than the area around cell towers. Bird fatalities are an increasing concern. Scientists estimate two to four million songbirds a year are killed, but accurate numbers are unknown. Total bird deaths from structural collision is estimated at between 100 million and one billion deaths annually (Joe Eaton, “Tower Kill” Earth Island Journal, Winter 2001). Natural causes, habitat loss, disease and exhaustion, as well as crashing into other human built structures cause greater numbers of bird death.

One way to decrease the impact of towers on bird fatalities is to change the lighting. The flashing red lights confuse birds more than white strobe lights, causing them to funnel around the lighted area until they hit a guy wire or the tower itself. The red lights are navigational aids and important for small aircraft. Currently the FAA and FCC require them.

Shorter towers under 500 feet high could decrease the need for guy wires and reduce tower impact. (“Battered by the Airwaves” by Wendy Weisensel, Wisconsin Natural Resource Magazine, February 2000, pgs 9-15)

Cell tower siting on agricultural land can be profitable to the landowners of those sites. Each provider with an antenna on a tower ordinarily makes a lease payment of $1,000 a month (more or less) to the landowner for the use of less than one acre of land. There are very few endeavors in agriculture that are as profitable per acre and this one is also beneficial to the scores of users of cell phones by increasing continuous signal coverage and decreasing “black hole” areas. As with wind towers, it is the need of the telecommunication company and not the farmer that dictates the location of the towers, as well as local zoning regulations and rules.

Web references:

www.uwex.edu/ccs/cty/washington/cnred/growthmngt_cell_towers.html
www.emfservices.com/cell_towers.htm
www.towerkill.com
**Larger Dairy Operations**

The rural community and economy has changed rapidly over the last several decades. The number of dairy farms in Wisconsin has declined, primarily due to economic forces. At the same time, the average dairy herd size has increased. The continuing trend will likely be towards larger dairy farm operations in Wisconsin. Large dairy farms with more than 500 head accounted for 39% of all milk produced in 2001, up from 29% in 1997. Milk production by dairy farms with fewer than 500 head dropped from 71% of milk produced in 1997 to 61% in 2001 (AgriView, Oct. 31, 2002). Though much discussion and concern has been focused on the large dairy farms, it should be noted that less than 1% of the dairy herds in Wisconsin were this size in 2000. The average dairy farm in Wisconsin has been about 70 head of milking cows (UWEX 2002).

At the same time as the number of small farms has declined, the number of rural non-farm residences has increased dramatically. The shift of population demography from small family-run farms to a rural non-farm residential population has significantly changed the rural economy and its sociology. As the number of non-farm residences increases, conflicts between farmers and non-farmers increase. Rural residents with a non-farm background are less likely to be tolerant of odors and noises from farming operations. The largest source of complaints that the Department of Agriculture Trade and Consumer Protection receive regarding farming involves either odor or noise.

As farm operations grow in size, citizens are becoming more concerned about the potential environmental impacts on water and air quality. The actions of a large operation can have greater impact on both the local economy and environment than a small farm. As farms reach the size requiring state and local permits, the operations raise local awareness and concern. There are many differences of opinion in communities about the trend toward larger farming operations. The siting of large dairy operations in Wisconsin at times has been quite controversial.

There is no definition of what a “large” farm is. A definition frequently used is the size at which an operation must obtain state or local permits. Presently, animal operations with greater than 1,000 animal units must obtain and meet the requirements of a Wisconsin Pollution Discharge Elimination System (WPDES) Permit, which contains detailed requirements for environmentally safe operations of the facility. For dairy farms, this threshold is about 500 milking cows and associated replacement heifers. Typically, the expanded operation is a dairy that increased its numbers of milking cows to take advantage of the economics of scale. Research over the past decade has not demonstrated that the cost of production goes down as herd size increases. While there are some cost and price advantages to larger farming operations, evidence does not prove that large farms produce milk at lower cost. This is because more units of milk must be sold as the profit margins decrease in order to maintain income levels.
Cited advantages of larger dairy operations include:

- Allowing the farmer to have a lifestyle similar to other business managers. This change in operation allows the farmer to have reasonable work hours and time away from the farm operation.

- Direct job creation (hired labor instead of family members)—employment with good benefits and salaries.

- Local business economy benefits with increased purchases and service needs, benefiting contractors, cooperatives, farm implement dealers, veterinarians, etc.

- Sustain other farmers by buying feed and hay locally and securing services such as custom heifer raising and harvesting.

- Maintain rural character of a community.

- Manure can be used to replace traditional commercial fertilizers or, because of the large amount produced, to generate electricity.

- Improved tourism. People may travel to see the farm.

- Have greater environmental oversight than smaller farms. Permitted farms must have and follow a nutrient management plan.

Though closely regulated by the WPDES permit process, the potential of severe environmental impacts is greater due to the large amount of manure to be managed. Good environmentally protective management of large animal operations primarily includes the challenges associated with the safe handling of very large quantities of manure. Typically one dairy cow produces about 22 tons of manure annually (85% of this is water or 3.4 tons dry matter).

The potential environmental impacts of large dairy operations can include:

- Groundwater impacts (nitrogen, bacteria, and pharmaceuticals) related to infiltration of manure from large, intensively used cattle yards, leaking or failed manure storage pits and/or land spreading of manure on sensitive areas. E. Coli contamination of groundwater can cause significant illness and death.

- Surface water impacts (phosphorous, nitrogen or ammonia, bacteria and pharmaceuticals) on rivers, streams or lakes, related to direct runoff from the barnyard and cattle lots, failure of manure storage pits, or land spreading of manure on sensitive land areas. Farms, urban runoff and sewage discharge are all possible sources for the pathogen ‘cryptosporidium’ that infected more than 350,000 people in Milwaukee in 1993 resulting in a number of deaths.

- Odor problems associated with large-scale animal operations come from the animal buildings and adjacent yards and manure storage pits, and/or are related to the land application of the manure.

- Land spreading of manure, when it exceeds the ability of the crop to take up the nutrients in the manure, can result in increased phosphorus and nitrate levels in the soil. Both of these conditions can significantly increase either the phosphorous concentrations in nearby waterways via surface water runoff, or increase the nitrate levels in groundwater through downward percolation.

- Manure generated from large numbers of animals in one location often must be transported greater distances over public roads, increasing large truck traffic, road maintenance and potential for spillage on roadways and conflicts with neighbors.
The public may be more aware of the potential problems created by large dairy operations but overall the environmental impacts of these operations is probably less than smaller dairy farms because of stricter regulations for large operations. In total, the contribution of pollutants to ground and surface waters is probably greater from small dairy farms due to fewer regulations and the total larger number of animals. However, when there is a problem with larger farms, it is likely to be catastrophic.

Animal operations with less than 1,000 animal units must comply with the four Wisconsin Manure Management Prohibitions. These include: no overflow of manure storage structures; no unconfined manure stacking (piling) within Water Quality Management Areas; no direct runoff from feedlots or stored manure to waters of the state, and no unlimited livestock access to waters of the state where high livestock concentrations of animals prevent adequate sod cover maintenance. The newly enacted NR151 Non-Point Runoff regulations, meant to encourage voluntary compliance, require that all farms have nutrient management plans by 2008 and those in high priority water areas by 2005 if 70% cost sharing is available.

**Livestock Facility Siting Law**

Governor Doyle, in 2004, signed 2003 Wisconsin Act 235 that created the Livestock Facility Siting Law. This Law directs the Department of Agriculture, Trade and Consumer Protection to develop a rule that provides a predictable framework for county and municipal decisions to site or expand livestock facilities and protects the environment. The final draft of the rule is expected to be sent to the legislature for approval in 2006. The Law also provides for the appeal of a local siting decision to the state Livestock Facility Siting Review Board. This Law applies to new or expanded livestock facilities only if a local ordinance requires local approval. Under the Law, a county, town, city or village may not disapprove or prohibit a proposed livestock facility siting or expansion of any size unless:

- The site is located in a non-agricultural zoning district.
- The site is located in an agricultural zoning district where the livestock facility is prohibited.
- The zoning prohibition, if any, must be clearly justified on the basis of public health or safety. The Livestock Facility Siting Law limits exclusionary zoning based solely on livestock facility size.
- The proposed livestock facility violates a valid local ordinance adopted under certain state laws related to shoreland zoning, floodplain zoning, construction site erosion control or stormwater management.
- The proposed livestock facility will have 500 or more “animal units” (or will exceed a lower permit threshold adopted by local zoning ordinance prior to July 19, 2003), and the proposed facility violates one of the following:
  - A state livestock facility siting standard adopted by DATCP (this rule).
  - A more stringent local standard that predates the siting application. The more stringent local standard must be based on reasonable and scientifically defensible findings of fact, adopted by the political subdivision, which clearly show the standard is necessary to protect public health or safety.
**Local Approval**

Many, but not all, political subdivisions require local approval of new or expanded livestock facilities. The Livestock Facility Siting Law does not require local approval. But if local approval is required, the political subdivision must grant or deny approval based on this rule. A political subdivision may not consider other siting criteria, or apply standards that differ from this rule, except that the political subdivision may:

- Apply less restrictive “setback” requirements that are specified as numerical standards in the local ordinance.
- Apply more stringent local ordinance standards that predate the siting application, if the standards are based on reasonable and scientifically defensible findings of fact. The findings must clearly show the standards are necessary to protect public health or safety.

To qualify for local approval, an operator must meet the standards in this rule, regardless of whether the applicant receives cost-sharing. However, a political subdivision may provide cost-sharing if it wishes to do so.

**Ethanol Production**

The production of ethanol from corn is one of the issues that poses a dilemma for the Rock River Coalition. Ethanol, produced from a renewable resource, is being strongly promoted as an alternative fuel reducing the United States’ dependence on foreign oil. As a new market, it will strengthen the agricultural economy. A weak agricultural economy is one of the RRC’s concerns and is one force driving urban sprawl and scattered rural housing development in Wisconsin. Agricultural producers, struggling to make ends meet, seek alternative sources of income to bolster or sustain their operation. Sale of farmland is often necessary for a farmer to economically survive. Thus the development of new markets for agricultural crops is a potential strategy for slowing urban sprawl and rural housing development. If farmers are making a profitable living they may be less likely to sell off farmland to the housing market.

The Rock River Basin is located in the corn and dairy production center of Wisconsin with much potential for ethanol plants to provide new markets for basin crops. Four ethanol plants are operating in Wisconsin. The plants in Monroe, Friesland and Utica are not far from the borders of the Rock River Basin. At the beginning of 2006, a plant is under construction at Milton (Rock County), and in Jefferson County, the Cargill Malt Plant at Jefferson Junction, is expected to be converted to a 140 million gallon ethanol facility with a tilapia fish farm, bio-diesel and electric co-generation components.

In the Midwest, most ethanol production plants currently use large quantities of corn to produce ethanol. Typically, one bushel of corn will make 2.67 gallons of ethanol. However, other materials such as cellulose based materials such as grass, wheat straw, corn stalks or wood can also be used to produce ethanol.
Advocates for ethanol cite several positives for the production and use of ethanol:

- Ethanol production provides a local market for corn, food processing byproducts and other cellulose based materials suitable for the conversion process. It is anticipated that the increased market demand for corn will result in a higher price paid to farmers for their product.

- Process produces beneficial byproducts such as carbon dioxide and distillers grain. These by-products can be as profitable as the ethanol. (Distilled grain residue is used for high protein animal feed.)

- Ethanol is an alternative fuel, reducing dependence on foreign gasoline use.

- When used as a motor fuel air emissions of carbon monoxide are reduced.

- Economic development for ethanol production provides new jobs and increases tax base.

- E10 gasoline is supposed to be less costly; however, this claim has not yet been born out at the pump.

The production of ethanol and its utilization as an alternative fuel has been very controversial in Wisconsin. There generally has been very strong local opposition to the siting of ethanol plants and the concept of using a food product for fuel production. Potential negatives cited for ethanol production and use include:

- Air pollution from the production process including carbon monoxide, methanol, formaldehyde, acetic acid and offensive odor.

- Heavy rail and road traffic bringing large volumes of raw materials into the plant and transporting ethanol out of the facility.

- Use of large amounts of water with potential significant impacts on local groundwater aquifers.

- Twenty-four hour plant operation and nighttime lighting change the countryside aesthetics for nearby residents.

- The increased value of corn may mean producers will convert lands enrolled in conservation programs or replace environmentally friendly crops such as alfalfa and hay with corn, resulting in increased soil loss and water pollution.

- Opponents claim that ethanol production results in a net loss of energy due to the high energy input required to grow and process corn into ethanol. However, it also takes more energy to produce gasoline from raw products.

- A Wisconsin DNR study shows that ethanol production and use will produce increased NOx and VOC emissions resulting in increased ozone production.

- Use will result in decreased gas mileage for vehicles using E10 fuel due to lower BTUs in ethanol.
For some, the energy balance question is not an issue, for a couple of reasons. First, there are studies on both sides of the energy balance question. Second, the energy balance of petroleum is less than one to one, by definition. It takes energy to produce gasoline, so one gallon of gasoline can't have a positive energy balance. It's obvious that society is willing to invest energy to obtain a liquid fuel energy source. Third, producing ethanol is just one of the products of a refinery (animal feed is another), so calculating the real balance between inputs and outputs (energy and other products) can be difficult. Finally, producing ethanol from corn is considered a short term technology by many scientists, with other feedstocks being developed which yield much more positive energy balances. So for many, the corn-ethanol argument is probably a short term issue and shouldn't be a main argument used to hold back development of the industry.

While the production of ethanol may represent a new strategy for improving or maintaining the long-range profitability of farmers and farm communities, we are part of the Global Market Place. Competition with foreign corn producers and lower cost ethanol produced in South America may be a significant factor in determining the long-term profitability of U.S. produced ethanol and the benefit that ethanol production may have for Wisconsin farmers.

The Rock River Coalition’s goal is to provide information so local communities can make the best decision for both their local environment and local economy. We hope that the increase in ethanol production does not lead to increased erosion from row crops or the conversion of sensitive areas near streams, currently enrolled in conservation reserve programs to row crop production. We also hope that biofuel production will increasingly look to other sources such as perennial crops, prairie grasses and waste streams for energy production.

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**Manure**

Manure can be used to produce energy with a manure digester. Several farms in Wisconsin are using digesters. Dane County is exploring developing digesters allowing area farmers to transport their manure to a digester instead of land applying the raw manure. Land spreading is a particular concern in winter as manure spreading in the basin has led to fish kills and well contamination in the basin.

Manure digestion results in energy production, plus a rich compost – that is valuable in the nursery/landscaping business and as bedding material for cows and a nutrient rich liquid low in phosphorus that is spread on cropland.
Increasingly, state and local governments are harnessing the power of the Internet, geographic information systems, and related technologies to help meet increased service demands and further stretch tax dollars. At the same time, innovative computer applications are improving citizens’ accessibility to information about the places where they live, work, and recreate. The convergence of these phenomena creates unprecedented opportunities for resource managers and environmental professionals to share resource information and foster an enhanced level of resource stewardship among citizens and local governments.

**Tools for Finding Data**

Federal, local, and state agencies invest significant resources collecting and managing data, much of which has value for local planning and decision making. The information holdings of agencies, however, can include a broad range of data types in a variety of formats. Internet tools help organize, catalog, and make these resources accessible, often in downloadable or online format. These tools include static web sites and searchable databases. Some focus only on a single data set or data source (e.g., data from a particular study) or only on information related to a specific resource (e.g., endangered and threatened species). Other tools serve more as a clearinghouse, providing access to a variety of data sets and information sources. Some tools guide users by letting them know how and where to find information rather than actually providing the information. The following pages represents a sample of these free Internet tools.
Aquatic and Terrestrial Resources Inventory Metadata Explorer  
http://atriweb.info

The Metadata Explorer provides a computerized “card catalog” to help you locate and access ecological data. The tool is primarily composed of data collected by the Wisconsin Department of Natural Resources, but also includes pertinent information from other sources.

Window to My Environment  
www.epa.gov/enviro/wme/

Window to My Environment provides federal, state, and local information about environmental conditions and features in an area of your choice. Use this tool to find and show the locations of regulated facilities, monitoring sites, water bodies, population density, perspective topographic views, and more.

WiscLINC  
http://www.geography.wisc.edu/sco/wisclinc/index.php

The Wisconsin Land Information Clearinghouse (WiscLINC) provides a portal to Wisconsin’s land information web sites, geospatial data, viewable map services, and more.

Geospatial One-Stop  
www.geodata.gov/

Through the national Geospatial One-Stop, you can access geographic data from federal agencies and a growing number of state, local, tribal, and private agencies.

University of Wisconsin Environmental Remote Sensing Center  
http://www.ersc.wisc.edu/resources.php

The Environmental Remote Sensing Center develops applications of cutting-edge remote sensing and geospatial technologies to improve our understanding of environmental systems. The center’s web site allows you to search, browse, and order satellite imagery for Wisconsin. You can also download near-real time data for Wisconsin and Lakes Michigan and Superior.

Soil Data Mart  
http://soildatamart.nrcs.usda.gov

Soil Data Mart allows you to determine where tabular and spatial soils data are available and download those data. The site also provides a template database for working with the data.

BRRTS on the Web  
http://botw.dnr.state.wi.us/botw/Welcome.do

The Wisconsin DNR’s Bureau for Remediation and Redevelopment Tracking System provides a database of contaminated sites (chemical spill sites, Superfund sites, etc.) that allows you to find information including investigation and remediation activities conducted at each site, names of companies/businesses connected to the site, and names of DNR project managers responsible for each site.
Natural Heritage Inventory On-line Database
http://www.dnr.wi.gov/org/land/er/nhi/NHI_IMS/onlinedb.htm

The Natural Heritage Inventory provides a statewide inventory of known locations and conditions of rare and endangered species, but many parts of the state have not yet been inventoried. Despite these limitations, the inventory is the state's most comprehensive database related to rare species.

Wisconsin Wetland Inventory
http://www.dnr.wi.gov/org/water/fhp/wetlands/mapping.shtml

This web site allows you to obtain wetland acreage facts and order wetland maps.

DNR Drinking Water System
http://www.dnr.state.wi.us/org/water/dwg/data.htm

The Wisconsin DNR's Drinking Water System contains four databases (Contaminants in Public Water Supplies, High Capacity Wells, Public Water Supply System, Well Construction Reports) that help the DNR and others implement Safe Drinking Water Act regulations covering public water systems.

AirData
http://www.epa.gov/air/data/index.html

The AirData Web site provides access to air pollution data for the entire United States. You can use AirData to produce reports and maps of air pollution data based on criteria that you specify.

Tools for Making Maps

Internet mapping tools allow people to organize and display spatial information. The resulting customized maps integrate environmental concerns with other features. Maps add a visual element to the planning process and can be an effective way to communicate consequences of land use decisions. Such tools can enhance community participation when people are able to see potential changes in relation to where they live. The following represents a sample of these free Internet tools.

ATRI Comprehensive Planning Mapping Site
http://atriweb.info

This interactive web site allows you to create maps using Wisconsin DNR's spatial data. You can zoom in and out, identify features, and perform simple queries on a set of map layers. You can also access guidance documents relating the importance of each layer to comprehensive planning.

DNR Managed Lands
http://maps.dnr.state.wi.us/lands

This interactive web site allows you to create maps of lands managed by the Wisconsin DNR, including lands managed through ownership, easement or lease rights.

Web Soil Survey
http://websoilsurvey.nrcs.usda.gov/app/
Copies of this manual are available for $3 or on the web at either http://www.rockrivercoalition.org or http://basineducation.uwex.edu/rockriver. Checks can be sent, payable to the Rock River Coalition, to RRC, 864 Collins Rd., Jefferson WI 53549. RRC can also be contacted at river@excel.net or by calling 920-674-7443.

The RRC Rural Development Guidelines and Policies is intended to provide information to the public, legislators, and local elected officials on a number of land use related issues. Views expressed represent a partnership effort and may not necessarily be shared by all participating organizations.
Provided for you is a CD of Washington County Farmland and Open Space Preservation Tools Manual. It is also available at www.co.washington.wi.us. This builds on the Rock River Coalition Manual, but provides more detailed information.
The Changing Landscape of Wisconsin and the Rock River Basin

Many factors place pressure on agriculture and open space in the Rock River Basin. Fewer people are making their living on farms and many people desire a home in the country. If we want to protect a rural agrarian base, strong vital land use protection must be implemented. See pages 1-5 for more information.

Maps courtesy of the University of Wisconsin Program on Agricultural Technology Studies (www.wisc.edu/pats)
The Rock River Coalition (RRC), a 501(3)(c) not-for-profit volunteer organization, was established in 1994. Its mission is to educate and provide opportunities for people of diverse interests to work together to improve the environmental, recreational, cultural and economic resources of the Rock River Basin.

Its 150 members and volunteers are private citizens, conservation and historic organizations, businesses, private industries, Chambers of Commerce and local, state and federal agency staff. Membership dues are $20 for individuals, small businesses and schools, $25 for families, $10 for seniors and students, and $50 for corporations.

In mid-1998, the Department of Natural Resources (DNR) approached the RRC to become its basin-wide partnership group. The RRC agreed and in November 1998, the RRC with the DNR, the Rock River Partnership (RRP) and the University of Wisconsin-Extension (UWEX) hosted a basin-wide forum in Fort Atkinson titled “Rock River Basin—Partnerships for the Future.” Over 1,600 basin-wide businesses, private citizens, state, county, local and federal agencies were invited to the forum. The 180 people who attended identified major issues in the basin.

As a result of the first forum, six basin-wide issue teams formed: Surface Water Quality, Wetland/Shoreland, Storm Water, Groundwater, Recreation, and Rural Development Concerns. They have been meeting regularly to develop action plans and implement activities.

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