

DODGE COUNTY LAND AND WATER RESOURCE MANAGEMENT PLAN



**Prepared by:
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PLAN SUMMARY

Introduction

As Dodge County's population continues to grow, land use pressures and conflicts increase, and the protection of our land and water resources becomes a greater challenge. County residents are demanding that our land and water resources be available for their use in a clean, safe and undamaged condition. The protection and improvement of our natural resources has become a high priority in the minds of many county citizens. The challenge before us is to meet the public's demand for high quality land and water resources in a timely and a cost-effective manner.

In 1997, Wisconsin Act 27 created a county land and water resources management planning initiative. Dodge County's first Land and Water Resource Management Plan was written in 1999, was subsequently revised in 2007, and is now hereby revised to address current and future resource management issues. As with the original plan in 1999 and also the revised plan from 2007, this revised plan was developed using a locally led process for public input, and will also rely on the locally led process for successful plan implementation. Information and data necessary for plan development was requested and obtained with the assistance of county landowners and other residents, various government agencies, and private conservation organizations. These same landowners, government agencies, and private organizations will need to work together to accomplish the goals and objectives identified in this plan.

The five key components and activities of the Dodge County Land and Water Resource Management Plan are to:

- Assess the condition of land, water and other natural resources of Dodge County
- Identify and prioritize critical land and water resource issues needing corrective actions
- Develop the goals, objectives and action steps needed to improve the level of natural resource protection
- Prepare and implement a multi-year work plan aimed at achieving plan goals and objectives, including a strategy to implement the NR 151 Nonpoint Performance Standards and Prohibitions
- Evaluate and monitor progress with efforts to implement the plan

The successful implementation of this plan will require that adequate financial resources be provided to cost-share the installation of needed land and water conservation practices. It will also require that adequate financial resources be provided to support the technical staff needed in the Dodge County Land Conservation Department, as well as in other state and federal conservation agencies. Coordination and cooperation between all levels of government and with private conservation organizations will be essential if this plan is to be effectively implemented.

Chapter Summaries

A brief summary of each chapter of this plan follows:

Chapter 1: County Setting, Natural Resources and Trends

[Location]: Dodge County is located in south central Wisconsin, covering a surface area of 576,000 acres, with the largest city found entirely within the county bounds being Beaver Dam.

[Geography and Topography]: The County's present day geography and topography was shaped by the advance and retreat of continental glacial ice. Glacial drumlin hills represent one of the unique geographical land features of Dodge County, along with the 32,000 acre Horicon Marsh, known to be the largest freshwater cattail marsh in the upper Midwest.

[Existing Land Use and Land Use Trends]: The land use pattern of Dodge County is primarily agricultural, open space and scattered residential development, along with several small incorporated communities. Agriculture is central to the culture, economy and landscape of Dodge County, but has been under pressure over the last three to four decades from land use conversions to residential, commercial and industrial uses.

[Soil Resources]: The majority of soils in the county are upland silt loams.

[Surface Water Resources]: Surface waters cover over 21,000 acres (3.3%) of Dodge County's surface area, and include 31 lakes and ponds, and 50 rivers and streams. Most of the county is part of the Rock River Basin, with the extreme northeast corner draining to the Milwaukee River, and the extreme northwest corner draining to the Fox River.

[Groundwater Resources]: Groundwater is the primary source of drinking water in Dodge County, and the downward percolation of precipitation is the source of our groundwater. Poor land use decisions can and have introduced contaminants into groundwater reservoirs.

[Woodland Resources]: Woodland resources cover another 24,000 acres of Dodge County's surface area, with timber stands located east of the Rock River dominated by northern hardwoods such as sugar maple, basswood, and white ash; and timber stands located west of the Rock River dominated by mature oak that are converting to central hardwood species such as hickory, black cherry, elm and box elder. As much as 20 percent of the standing volume of saw timber within Dodge County is ash. While the invasive Emerald Ash Borer has not yet been found in Dodge County, it has been found in a woodlot located approximately 13 miles from Dodge County's eastern boundary, and does present a very real threat to the long-term viability of ash as a woodland species in Dodge County.

[Wetland Resources]: Substantial wetland acreage covers many parts of Dodge County, with the most noteworthy wetland area being the Horicon Marsh located in north central Dodge County.

[Wildlife Resources]: Although agriculture dominates the Dodge County landscape, interspersed wildlife habitat support wildlife species and populations that provide ample opportunities for hunting, bird watching, and general wildlife sightseeing.

[Fishery Resources]: The shallow, low gradient, and nutrient rich condition of the surface waters of Dodge County make it very challenging to manage fishery populations. Currently, Fox Lake, Beaver Dam Lake, and Lake Emily offer respectable fisheries for public use and recreation.

Chapter 2: Plan Development Process

[Plan Development – Data and Information]: Data and information used in the development of this plan was obtained from various local, county, state and federal agency and private organization documents and reports, and from the input of various local, county, state and federal agency and private organization staff, and from county citizens.

[Plan Development – Citizen/Public Involvement]: A citizen’s advisory committee was convened by the Dodge County Land Conservation Committee to assist with identifying and prioritizing resource concerns in Dodge County. The general public was informed and invited to participate in the plan development process by general circulation news releases.

Chapter 3: Soil Erosion and Water Quality Conditions

[Water Quality Conditions]: Surface water quality in Dodge County is impacted by both nonpoint and point sources of pollution. However, it is estimated that nonpoint sources of pollution currently contribute more than 80% of the total pollutant load. Because agriculture dominates Dodge County’s landscape, the majority of nonpoint pollutants can be attributed to agricultural land use activities. Groundwater has also been impacted by various pollutant sources. Over 2,400 private well samples have been analyzed since 1986, with results showing that, on a county-wide scale, 8.8 percent of wells had nitrate levels exceeding the health standard, and 21 percent tested positive for total Coliform bacteria. A growing concern for the quality of both surface and ground water resources is the potential for contamination from land applied manure.

[Soil Erosion Conditions]: Because agriculture dominates Dodge County’s landscape, the vast majority of soil erosion and sediment delivery can be attributed to cropland cultivation practices. A county-wide soil erosion transect survey conducted for the past thirteen years indicates that, on a county-wide scale, the average cropland soil erosion rate in Dodge County currently stands at 2.1 ton/acre/year, and approximately 11% of all cropland acres are eroding above tolerable levels.

Chapter 4: Issues, Goals and Objectives

[Issues]: The citizens advisory committee convened by the LCC identified and prioritized the most critical land and water resource issues as follows, in descending order of priority:

- Groundwater Protection
- Soil Erosion / Sediment Delivery
- Farm Drainage / Wetland Management
- Nutrient Management
- Wildlife Management Control
- Conservation Education of Agricultural Producers
- Conservation Education of the General Public
- Land Use Conversion Issues

[Goals and Objectives]: To address the top eight land and water resource issues, the citizens’ advisory committee established seven goals and fourteen objectives. The seven goals area as follows:

- Protect and Improve the Quality of Dodge County’s Ground Water Resources
- Protect and Improve the Quality of Dodge County’s Soil Resources and Surface Water Resources
- Protect Dodge County Land & Water Resources from Adverse Impacts Caused by Cropland Drainage and Wetland Alterations

- Protect Dodge County Agricultural Interests from Wildlife Crop Damage
- Increase Farmer and Rural Landowner Awareness and Knowledge of Land & Water Resource Issues in Dodge County
- Increase General Public Awareness and Knowledge of Land & Water Resource Issues in Dodge County
- Encourage Environmentally Desirable Types of Land Use Conversions

Chapter 5: Coordination With Other Agencies and Programs

Coordination and cooperation across agency lines and with private conservation organizations will be necessary to achieve plan goals and objectives. A listing of financial and technical assistance opportunities from federal agencies, state agencies, county and local government, and private organizations is provided.

Chapter 6: NR 151 Nonpoint Runoff Rules Implementation

[NR 151 Nonpoint Runoff Rules]: A complete presentation of the agricultural nonpoint performance standards and prohibitions as detailed within Administrative Rule NR 151 is outlined.

[NR 151 Nonpoint Runoff Rules - Local Implementation Strategy]: Dodge County's proposed strategy for implementing the NR 151 Runoff Rules is described in this section. The strategy includes information and education activities, a priority farm identification process, a strategy for making one-on-one farm contacts, a description of what documentation will be prepared for NR 151 evaluation activities, and other local regulations that complement the NR 151 implementation process.

Chapter 7: Information and Education Strategy

Working with various staff of the University of Wisconsin Extension Service, the Dodge County Land Conservation Department will carry out various information and education activities to help achieve the goals and objectives of this plan. A variety of educational outreach activities are planned, including one-on-one landowner contacts, farmer workshops, newsletters and press releases, and field days.

Chapter 8: Evaluation and Monitoring

Various activities will be undertaken in an effort to track and evaluate progress in implementing this plan. Specific measurement tools will be used to monitor the degree of achievement for each of the seven major goals established in the plan.

CHAPTER 1

COUNTY SETTING, NATURAL RESOURCES AND TRENDS

Location

Dodge County is located in south-central Wisconsin, having 24 civil towns and covering a surface area of 576,000 acres (see Figure 1-1). The largest city found entirely within the county bounds is Beaver Dam. Four other large communities found partially in Dodge County and partially in adjoining counties include Randolph

and Columbus on the west, Watertown on the south, and Waupun on the north. The City of Juneau is located in the center of Dodge County and is the county seat.

Geography and Topography

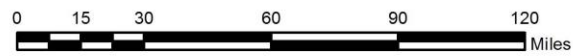
During the Ice Age a massive ice sheet covered all of Dodge County. The county's present day topography was shaped by the advance and retreat of this ice mass. Glacial debris was deposited as ground moraine and other glacial formations, varying in thickness from 100 to 300 feet in depth. One of the most unique glacial formations are the glacial drumlin hills, known only to exist in three areas of the world including France, upstate New York, and the Wisconsin counties of Jefferson and Dodge. Figure 1-2 shows the orientation of these drumlin hills. There is approximately 400 feet of elevation change in Dodge County, with the highest point reaching 1,200 feet above sea level in the northeast, to 800 feet above sea level in the southwestern portions of the county. The two most prominent topographic features in the county include the very flat marsh area known as the Horicon Marsh, and the Niagara Escarpment which runs along the eastern edge of the Horicon Marsh, rising above the marsh in some areas by as much as 190 feet.

Existing Land Use and Land Use Trends

The land use pattern of Dodge County consists of rural towns containing mostly agricultural land and scattered residential development, along with several small incorporated communities. The existing land uses in Dodge County are shown on Figure 1-3. Figure 1-4 details the existing land uses and acreages of Dodge County.

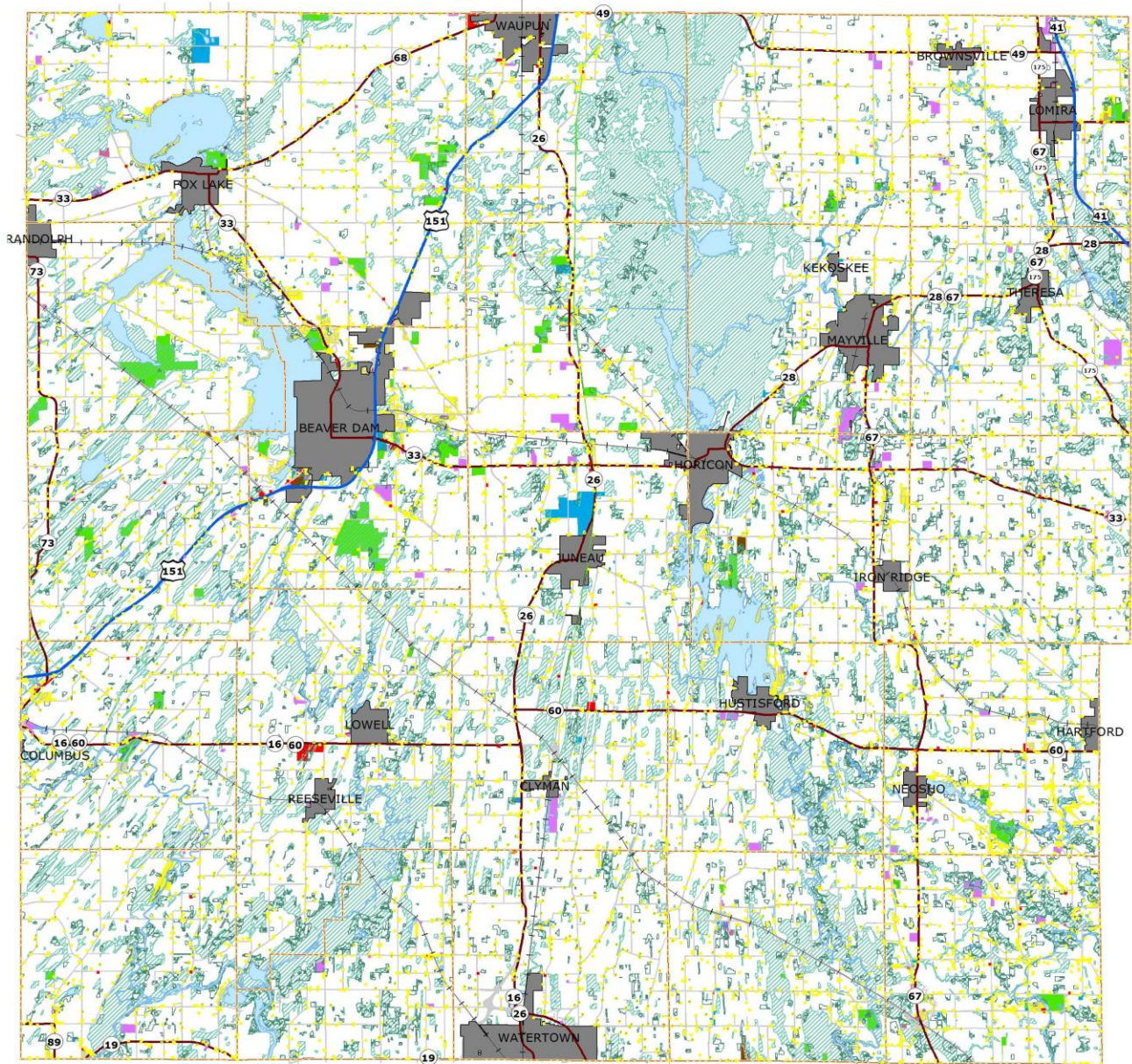
By far the largest of the land use categories is the combined total for agriculture and undeveloped/vacant land. This category also includes wetlands and open spaces. Agriculture is central to the culture, economy, and landscape of Dodge County. Approximately 75% of the total land cover in the county is in farmland uses. According to the 2007 USDA Census of Agriculture, the amount of land in farms in Dodge County actually increased 2.2% from 404,054 acres in 2002, to 412,949 acres in 2007. For the same period, the average size of farms increased 2% from 205 acres in 2002, to 209 acres in 2007. The number of farms increased by 0.5% during the same period. While Dodge County experienced these increases during the period, most other Wisconsin counties experienced decreases in the same categories.

Figure 1-1, Regional Setting
Dodge County, Wisconsin



Source: Dodge County Land Resources and Parks Department, July 2012

Figure 1-3, Existing Land Use
Dodge County, Wisconsin



Source: Dodge County Land Resources and Parks Department, July 2012 (August 2005 Survey)

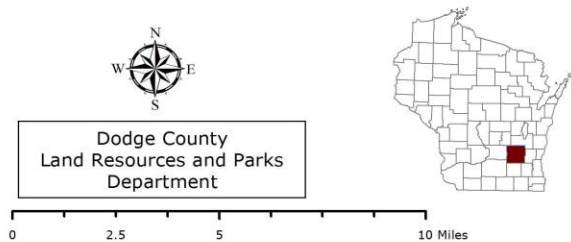


Figure 1-4

Existing Land Use, Dodge County

Land Use	Acreage	Percent of Total
Total Residential	9599.8	1.65%
Single family residential	9411	
Two family residential	85.3	
Multi family residential	33.7	
Mobile home parks	69.8	
Commercial	648.3	0.11%
Industrial and Quarries	2887.9	0.50%
Public and quasi public	1607.5	0.28%
Transportation	19007.7	3.27%
Parks and Recreation	4661.2	0.80%
Communication and utilities	118.7	0.02%
Surface water	19641.3	3.38%
Agriculture and other resource land	500270.984	86.16%
City and Village	22216.63	3.83%
County Total	580660.014	100.00%

Source: Dodge County Planning, Development and Parks Department, July 2012. Land use survey taken 2004.

Residential development in Dodge County consists mainly of single family housing, including farmsteads. Limited multi-family housing, manufactured housing, and seasonal housing units are also present. Residential development is mostly scattered throughout the county, and generally follows transportation corridors. However, small concentrations of residential development can be found along lake shorelines, and adjacent to incorporated municipalities. More intensive residential development, such as duplexes, condominiums, and apartments can be found in villages and cities in Dodge County.

Commercial growth can be witnessed throughout the county. Many of the major roadways attract businesses. In recent years commercial growth has occurred in the Mayville/Horicon area, and also on U.S. Highway 151 and State Highway 33 corridors near Beaver Dam. The Beaver Dam area has captured a substantial number of traditional highway commercial uses such as gasoline stations, fast-food restaurants, and convenience shopping. The City of Waupun has also seen significant commercial development areas along State Highway 49.

Most industrial development can be found in Dodge County's cities and villages, which have the infrastructure (i.e. sewer and water) to support this type of development. Most of the cities and villages have industrial parks. However, some fringe areas around traditional urban centers have recently seen development of open land for industrial uses, due to the expansion of utilities and transportation networks.

Public and quasi-public land uses perform a support function to the people living and working in both urban and rural environments. Land uses within this classification include hospitals, schools, cemeteries, and churches, along with government offices, prisons, and public buildings. The amount of land devoted to these uses is not large in comparison to the other land use categories, but these facilities provide critical support and employment opportunities to the population of the county.

Dodge County has many areas that are dedicated for use as parks and recreational land. The effects of a growing county population, growing interest in outdoor activities, and increases mobility will place greater demands on recreational facilities in the county. The preservation of public recreational areas as the county continues to grow is a key element in maintaining the quality of life in Dodge County.

Changes in land use are related to changes in population, housing, transportation, community services, agriculture, natural resources, and economic development. The following land use trends are anticipated in Dodge County over the next 20-25 years which will likely impact land and water resource management:

- Agriculture will maintain a strong presence in Dodge County. There will likely be a decreasing number of total farms, but an increasing number of large farms. It is likely that the number of dairy farms will continue to decline, but dairy herd sizes will continue to increase, with more farms handling manure in a liquid form.

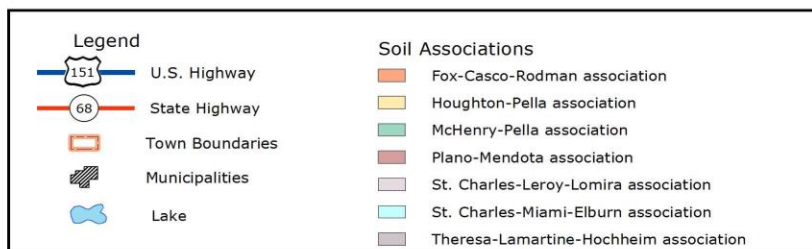
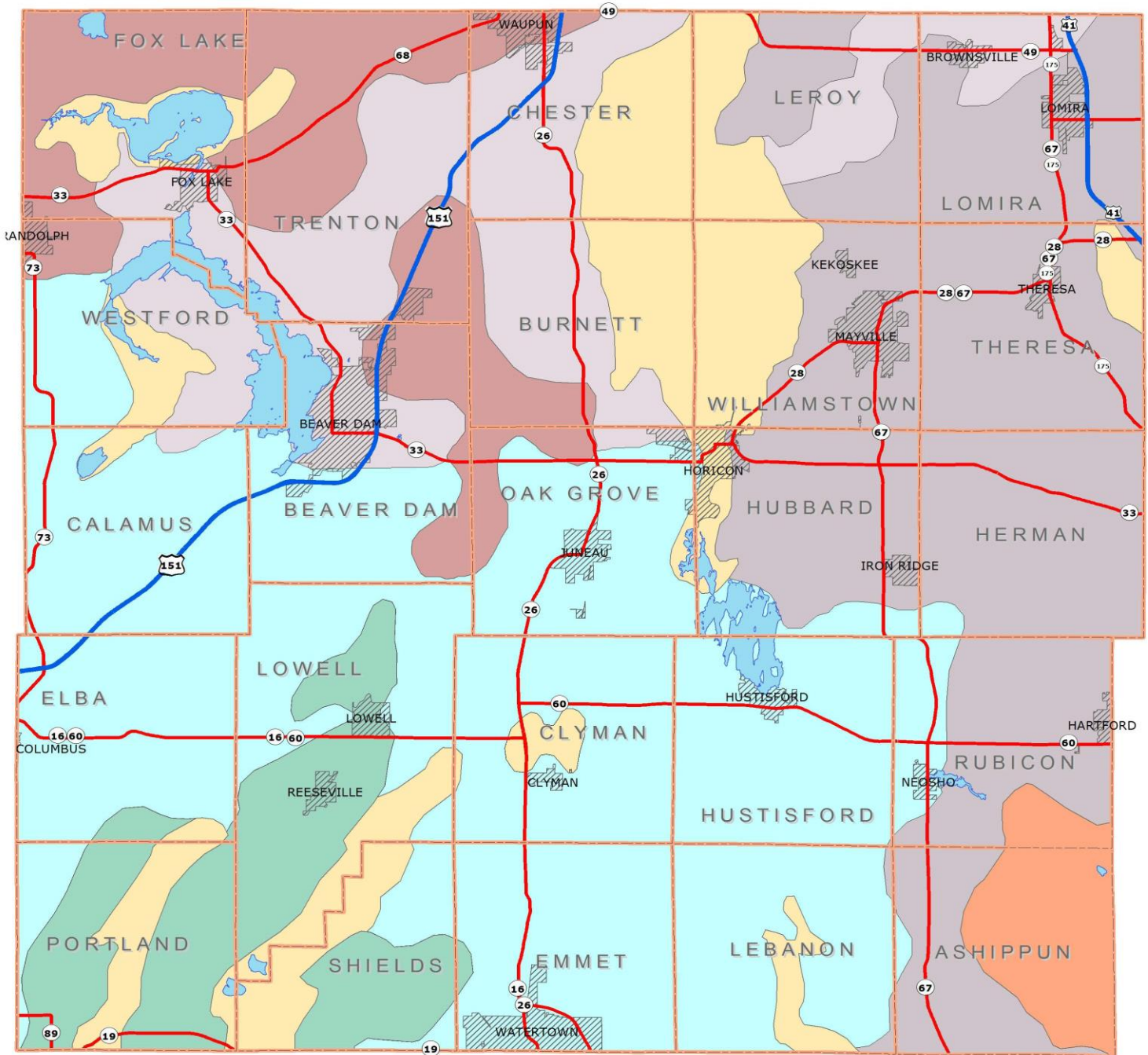
- Interest in cash cropping is likely to increase, resulting in a decrease in cropland being rotated into hay, and increasing the potential for soil erosion, sediment delivery, and water pollution.
- Dodge County's population and the number of housing units in the county will continue to grow, requiring more housing units and more land to accommodate the county's growing population.
- The county's riverfronts, woodlands, and highland areas will be desired for residential development.
- Residential and highway corridor development will result in a net loss of available agriculture and open space land.
- Interest in using lakes, rivers and public recreational areas will likely increase.
- Groundwater and surface water resource will continue to be threatened by pollution from agriculture and urban development.

Natural Resources

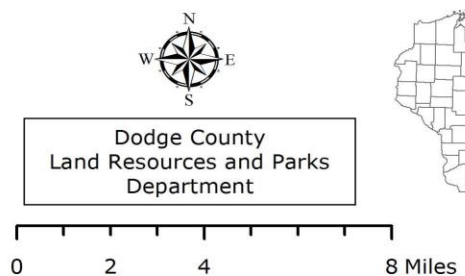
Soil Resources – Soil is comprised of varying proportions of sand, silt, clay, gravel, and organic material. The majority of soils in the county are upland silt loams considered good for agricultural uses. Topsoil generally ranges between 10 and 14 inches in depth. There are seven major soil associations in Dodge County. A soil association represents a unique natural landscape having a distinct pattern of soil, relief, and drainage. Typically, a soil association consists of one or more major soil series and some minor soils. The association is named for the major soils. The seven general soil associations found in the county include Fox-Casco-Rodman, McHenry-Pella, Plano-Mendota, Houghton-Pella, St. Charles-Leroy-Lomira, Theresa-Lamartine-Hochheim, and St. Charles-Miami-Elburn. See Figure 1-5 for the location of the various soil associations. A description of each of these seven soil associations follows.

1. The Plano-Mendota Association consists of deep, nearly level to sloping, well drained and moderately well drained soils that have a silty and loamy subsoil formed on ground moraines and drumlins. This soil association makes up about ten percent of the county. In cultivated areas the main concern is controlling soil erosion and maintaining good soil health.
2. The Houghton-Pella Association consists of deep, nearly level, very poorly drained organic soils and soils that have a silty subsoil formed in decomposed sedges and reeds or in silty material and glacial drift. This association makes up about ten percent of the county. In cultivated areas the main management concern is drainage.
3. The St. Charles-Leroy-Lomira Association consists of deep, nearly level to steep, well drained soils that have a silty and loamy subsoil and is found on ground moraines and drumlins. This association makes up about eleven percent of the county. In cultivated areas the main management concern is controlling soil erosion and maintaining good soil health.

Figure 1-5, General Soil Associations
Dodge County, Wisconsin



Source: Dodge County Land Resources and Parks Department, July 2012
Derived from US Department of Agriculture, Soil Conservation Service files, August 1998



4. The Theresa-Lamartine-Hochheim Association consists of deep nearly level to steep, well drained, and somewhat poorly drained soils that have a silty and loamy subsoil. This association makes up about 24 percent of the county. In cultivated areas the main management concern is controlling soil erosion and maintaining good soil health.
5. The Fox-Casco-Rodman Association consists of deep, nearly level to steep, well drained and excessively well drained soils that have silty and loamy subsoil. This soil association makes up about two percent of the county. In cultivated areas the main management concern is controlling soil erosion and maintaining good soil health.
6. The St. Charles-Miami-Elburn Association consists of deep, nearly level to steep, well drained to somewhat poorly drained soils that have a silty and loamy subsoil. This soil association makes up about 36 percent of the county. In cultivated areas the main management concern is controlling soil erosion and maintaining good soil tilth.
7. The McHenry-Pella Association consists of deep nearly level to moderately steep, well drained and poorly drained soils that have silty and loamy subsoil. This association makes up about seven percent of the county. In cultivated areas McHenry soils require careful erosion control management, Pella soils require drainage.

Surface Water Resources – Over 21,000 acres (approximately 3.3% of Dodge County’s surface area) of surface water covers parts of Dodge County, including 31 lakes and ponds, and 50 rivers and streams. Figure 1-6 details the amount of surface waters found in Dodge County and its communities. Most of Dodge County is part of the Rock River Basin, contributing surface water runoff and groundwater discharges to the Rock River and ultimately the Mississippi River. The extreme northeast corner (approximately 5 square miles) of the county is located in the Lake Michigan Basin, contributing surface water runoff and groundwater discharges to the Milwaukee River and ultimately Lake Michigan. The extreme northwest corner (approximately 4 square miles) is located in the Upper Fox River Basin, and contributes surface water runoff and groundwater discharges to the Lower Grand River and ultimately Green Bay and Lake Michigan. Major surface water bodies include the Rock River, the Beaver Dam River, the Crawfish River, Fox Lake, Beaver Dam Lake, Lake Sinissippi, and the Horicon Marsh. Figure 1-7 provides an overall view of Dodge County’s surface waters, and Figure 1-8 highlights the major surface water features in Dodge County.

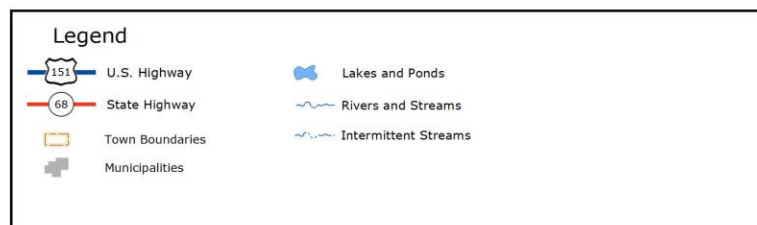
Groundwater Resources – The primary source of drinking water in Dodge County is our groundwater resources. The source of all groundwater is precipitation, which percolates down through the soil until it reaches the saturated zone called an aquifer, where it is then contained. Water in an aquifer travels from its source to a discharge point such as a well, wetland, spring, or lake. During periods of increased precipitation or thaw, groundwater reserves are replenished with water moving by gravity through permeable soils and rock. Poor land use decisions can introduce contaminants into groundwater reservoirs, especially in areas where soils are shallow to bedrock. Figure 1-9 shows the general range of depth to bedrock in Dodge

Figure 1-6
Surface Water, Dodge County

	Acres	% of Total
T. Ashippun	108.8	0.5
T. Beaver dam	2,237.40	10.6
T. Burnett	409.5	1.9
T. Calamus	329	1.6
T. Chester	998.9	4.7
T. Clyman	49.1	0.2
T. Elba	260.1	1.2
T. Emmet	39.5	0.2
T. Fox lake	4,063.80	19.3
T. Herman	25.9	0.1
T. Hubbard	1,732.50	8.2
T. Hustisford	1,219.30	5.8
T. Lebanon	200.4	1.0
T. Leroy	717.6	3.4
T. Lomira	28.7	0.1
T. Lowell	497	2.4
T. Oak grove	222	1.1
T. Portland	406.4	1.9
T. Rubicon	261.9	1.2
T. Shields	334.2	1.6
T. Theresa	360.1	1.7
T. Trenton	499.3	2.4
T. Westford	3,404.10	16.1
T. Williamstown	1,236.00	5.9
V. Brownsville	0.1	0.0
V. Clyman	0	0.0
V. Hustisford	132.3	0.6
V. Iron ridge	2.2	0.0
V. Kekoskee	11.3	0.1
V. Lomira	10	0.0
V. Lowell	36.3	0.2
V. Neosho	21.8	0.1
V. Randolph*	0.2	0.0
V. Reeseville	0.5	0.0
V. Theresa	14.4	0.1
C. Beaver Dam	874.9	4.1
C. Columbus*	1.3	0.0
C. Fox Lake	35.3	0.2
C. Hartford*	1.3	0.0
C. Horicon	132.3	0.6
C. Juneau	0.2	0.0
C. Mayville	72.4	0.3
C. Watertown*	0	0.0
C. Waupun*	106	0.5
Dodge county	21,094.30	100.0

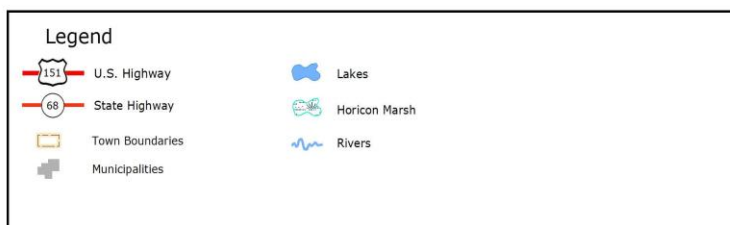
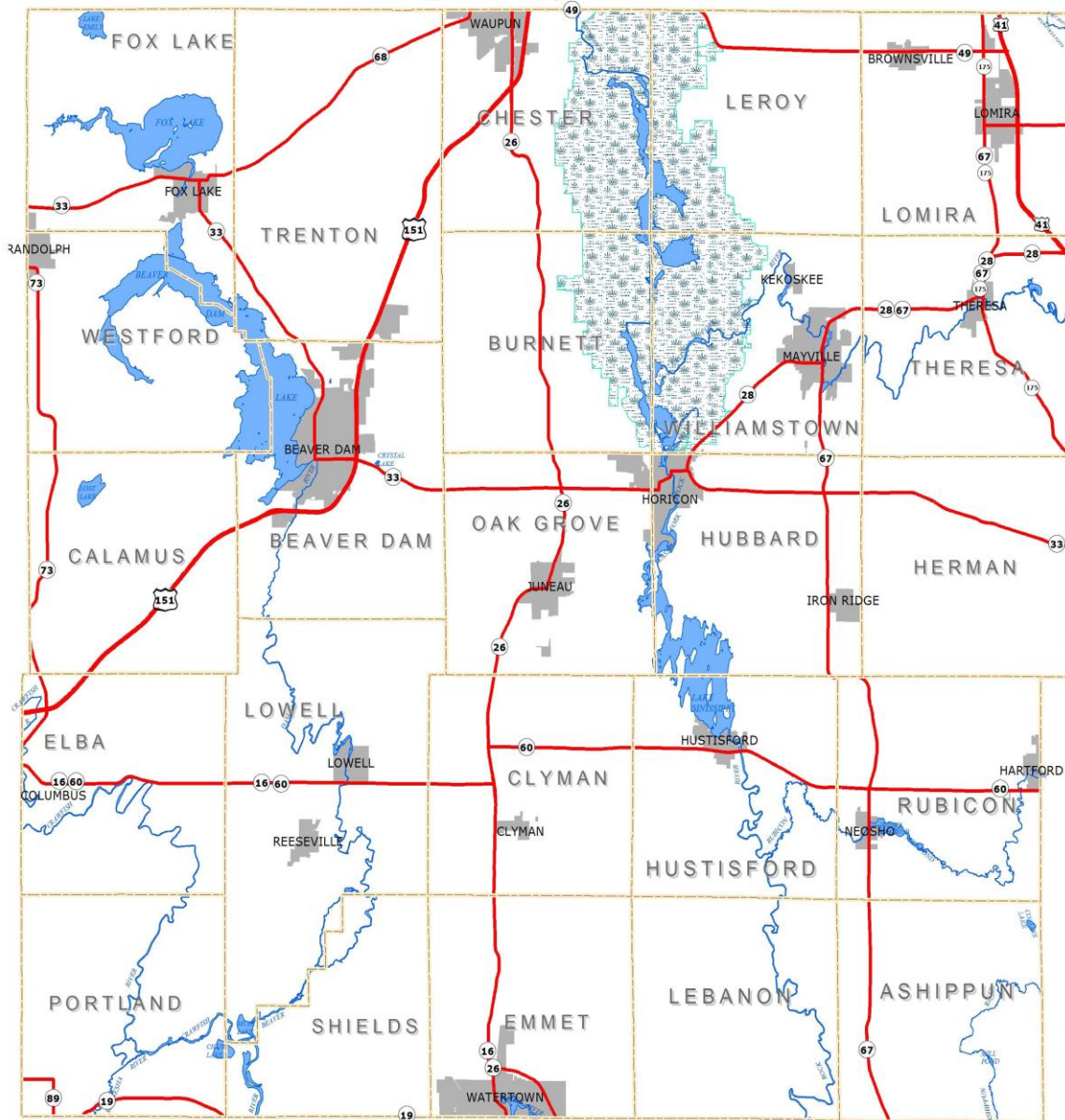
*Community partially located outside of county, acreage only includes portion in the county.

Source: Dodge County Land Resources and Parks Department, July 2012. Surface Water created from 2006 Aerial Photography.

[illegible]

The map includes a compass rose indicating North (N), South (S), East (E), and West (W). A scale bar at the bottom shows distances of 0, 2, 4, and 8 miles. An inset map of Wisconsin on the right shows Dodge County highlighted in red.

Figure 1-8, Major Surface Water Bodies
Dodge County, Wisconsin



Dodge County
Land Resources and Parks
Department

Source: Dodge County Land Resources and Parks Department, July 2012
Watersheds from DNR, Hydrology derived from USGS topographic maps

0 2 4 8 Miles

Dodge County Depth to Bedrock



2007

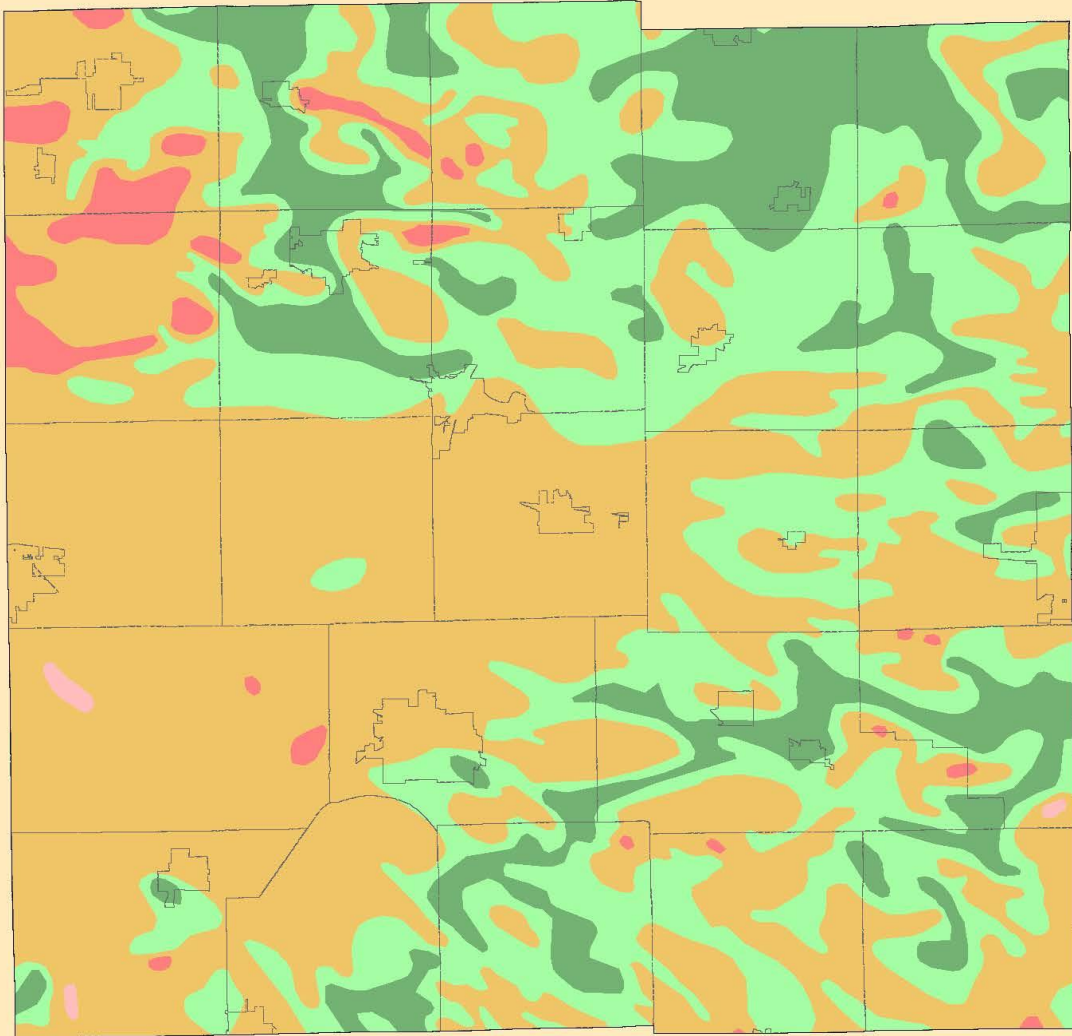


Figure 1.

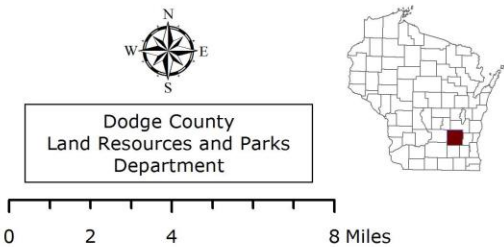
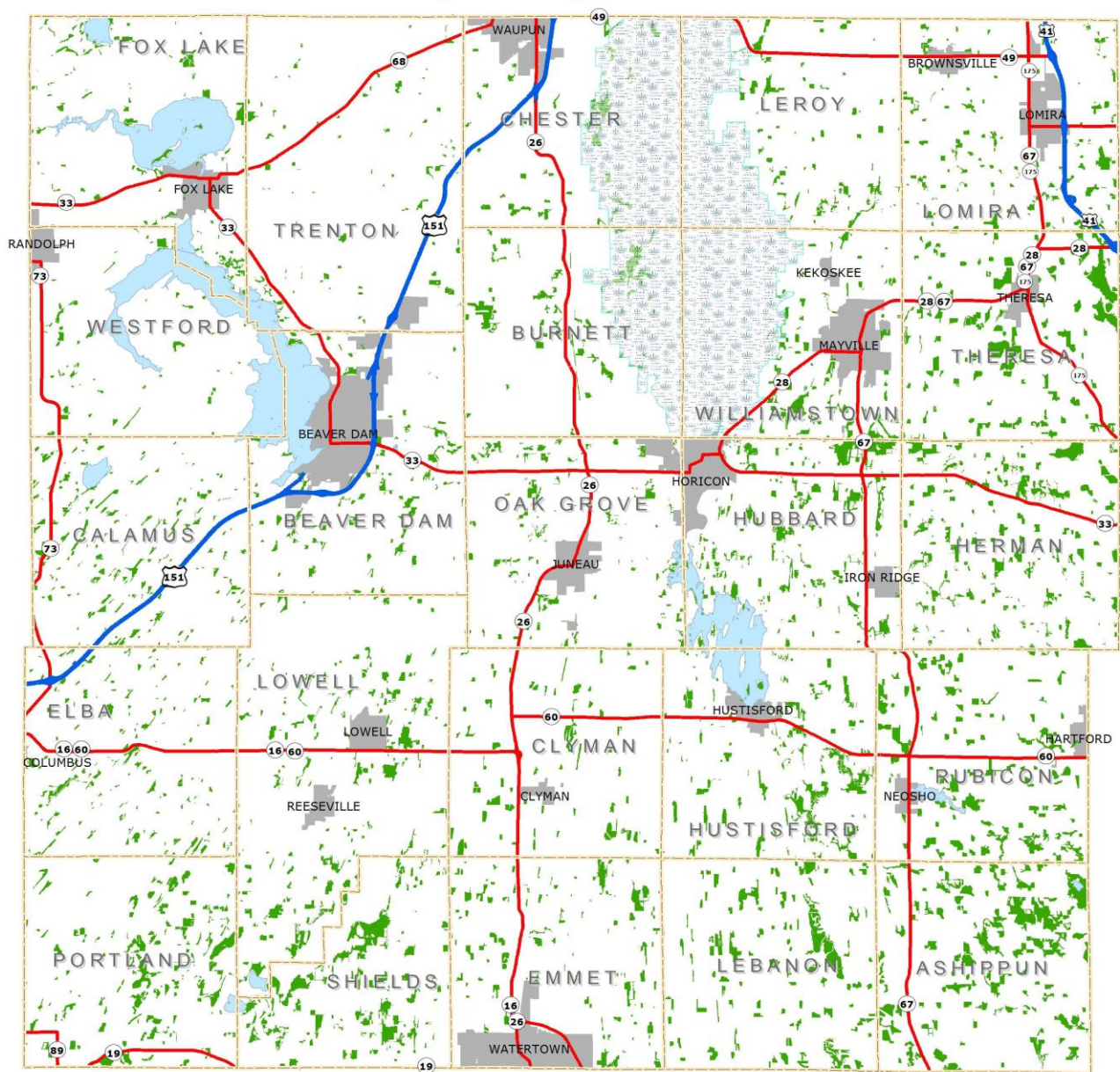
County. In recent years much has been learned about just how vulnerable our groundwater resources are to various forms of contamination. A Groundwater Flow Computer Model has been developed and can be used by local governments and others in predicting groundwater flow patterns and thereby better protect against groundwater polluting activities.

Woodland Resources – According to U.S. Forest Service Inventory and Analysis (FIA) data from 2010, Dodge County has an estimated 37,920 acres of forested lands. Prior to European settlement as much as 75 percent of the county had been forested. Following European settlement much of this forested land was converted to agricultural land and/or pasture. Of the forest resources that remain the timber type found east of the Rock River is predominantly northern hardwoods, with sugar maple, basswood, and white ash as the dominant species. To the west of the Rock River you find primarily mature oak woodlands which are in the process of converting to more shade tolerant central hardwoods for various reasons. Dominant central hardwood species within the county include hickory, black cherry, elm, and box elder. Also, according to the U.S. Forest Service FIA data, as much as ½ of the county's forests are bottomland hardwoods, many of which are dominated by green ash. According to the FIA data, as much as 20 percent of the standing volume of saw timber within the county is ash. This could pose a severe problem when the emerald ash borer (EAB) becomes established within the county. Many of the woodlands throughout the county have been severely degraded by pasturing, poor forest management practices such as high grading, and invasive exotic species. Figure 1-10 shows the general location of woodlands in Dodge County.

It is expected within the next 5 to 7 years that the emerald ash borer will be found within Dodge County. Currently, the closest known EAB population is on the east side of West Bend, approximately 13 miles from the eastern boundary of Dodge County. When EAB is found within the county, the county will be placed under quarantine for ash wood products and all firewood. The quarantine will restrict the movement of specified wood products to areas outside of the quarantined area. Currently there are 12 counties in Wisconsin where EAB has been discovered and a quarantine is already in place. Adjacent quarantined counties include Fond du Lac, Washington, and Waukesha. Ash management guidelines have been developed for forest management by the DNR. Landowners will be encouraged to follow those guidelines if and when they decide to harvest timber.

The future of the county's woodland resources depends on whether the remaining woodlands are managed in a sustainable manner. Woodland management plans help to ensure that sound management practices are used during timber harvests and other woodland uses. There are currently 3,680 acres of land entered into the Managed Forest Law in Dodge County. This program provides a tax incentive to woodland owners for following forest management plans that are written by DNR or private consulting foresters. The DNR forester is the primary provider of technical information and forest management advice within the county. The USDA-FSA and NRCS offices administer the Conservation Reserve Program (CRP), the Conservation Reserve Enhancement Program (CREP), and the Environmental Quality Incentives Program (EQIP), which offer incentives to landowners for tree planting and approved forest

Figure 1-10, Woodlands
Dodge County, Wisconsin



Source: Dodge County Land Resources and Parks Department, July 2012

management activities. The county LCD also administers an annual small packet tree sale program (WDNR Forester, 2012).

Other issues affecting forest management within the county include the following:

- Fragmentation and development of woodlands
- Establishment of tree plantings where they are not conducive to wildlife
- Excessive deer damage
- Gypsy moth defoliation
- Spread and control of invasive exotic species
- Woodland management that is not sustainable

Wetland Resources – The hydrology of soils, or the amount of water saturation present, largely determines how the soil develops and the types of plant and animal communities living in and on the soil. Wetlands may support both aquatic and terrestrial species. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promotes the development of characteristic wetland (hydric) soils. Wetlands may be seasonal or permanent, and have the capacity to store and filter pollutants ranging from pesticides to animal wastes. Wetlands also provide valuable habitat for fish, plants and animals. In addition, wetlands are also critical in controlling flooding, replenishing groundwater supplies, and contributing to stream flows, especially during dry months. An extensive series of wetlands is found throughout Dodge County. Figure 1-11 details the acreage of wetlands in Dodge County and its communities, and Figure 1-12 shows the general location of wetlands in Dodge County.

Wildlife Resources – Although agriculture is the dominant land use type in Dodge County, there exists much good quality wildlife habitat that supports a variety of wildlife species. In addition, to the hundreds of thousands of geese that migrate to the Horicon Marsh each spring and fall, the county's numerous natural and created wetlands are home to ducks, herons, egrets and swans. Dodge County also has excellent pheasant habitat. Deer populations have been increasing over the past 15-20 years to the point where deer damage to agricultural crops now equals the crop damage done by geese. Crop damage by Sand Hill Cranes is also becoming a big problem in certain parts of the county. Growing populations of resident Canada Geese and nesting Double-Crested Cormorants have damaged turf grasses and other natural shoreline vegetation, which has contributed to the erosion and lateral recession of lakeshore banks. Bird droppings have also contributed to the fecal contamination of county recreational waters. Dodge County is also home to a variety of song birds and the typical upland animals of southern Wisconsin, including rabbit, fox, raccoon, squirrel and muskrat.

Fishery Resources – The majority of waterbodies in Dodge County are large, shallow impoundments (6-19 feet maximum depth), formed by the placement of dams on flowing river systems. As a result of being located in an intensely agricultural county, surface water resources have been negatively impacted by the deposition of eroded soil in lakes and streams, destroying fish and wildlife habitat, and limiting boating activities on some waterways. Surface

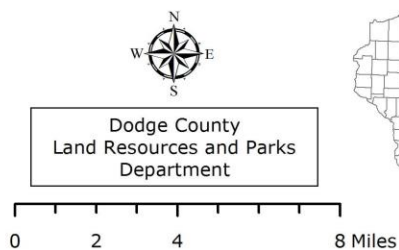
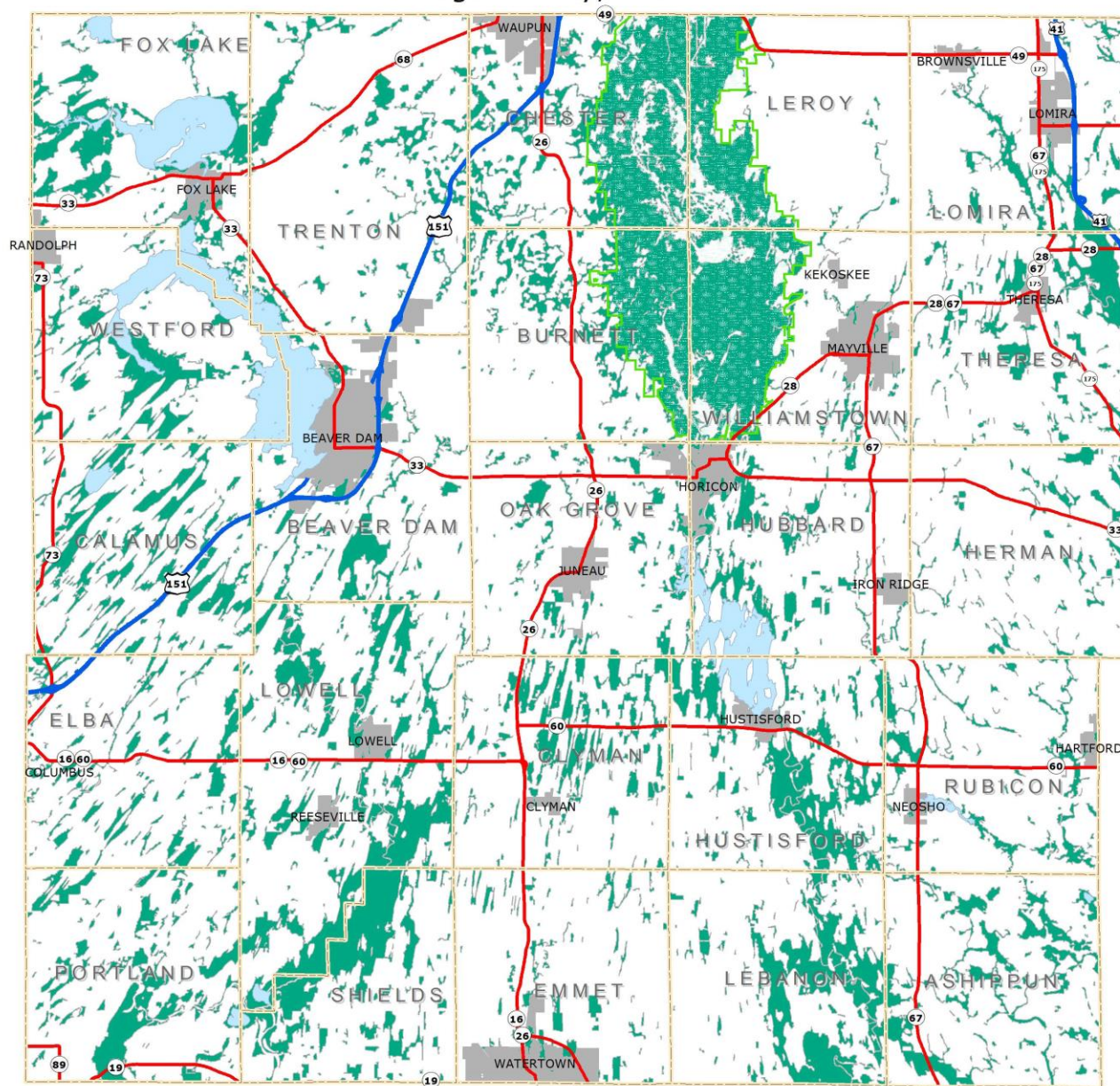
Figure 1-11
Wetlands, Dodge County

Municipality	Acres	% of Total
Ashippun	3871.60	3.66%
Beaver dam	2495.52	2.36%
Burnett	7619.95	7.21%
Calamus	4835.57	4.57%
Chester	9580.55	9.06%
Clyman	3730.05	3.53%
Elba	2949.24	2.79%
Emmet	1352.77	1.28%
Fox lake	4012.49	3.79%
Herman	1671.77	1.58%
Hubbard	2676.27	2.53%
Hustisford	5331.88	5.04%
Lebanon	5672.06	5.36%
Leroy	4972.11	4.70%
Lomira	2144.37	2.03%
Lowell	8912.47	8.43%
Oak grove	2136.12	2.02%
Portland	4357.28	4.12%
Rubicon	2258.64	2.14%
Shields	5165.42	4.89%
Theresa	3813.79	3.61%
Trenton	3306.08	3.13%
Westford	3293.78	3.12%
Williamstown	8350.13	7.90%
V. Brownsville	1.25	0.00%
V. Clyman	6.60	0.01%
V. Hustisford	22.23	0.02%
V. Iron ridge	19.14	0.02%
V. Lomira	22.45	0.02%
V. Lowell	93.89	0.09%
V. Neosho	20.11	0.02%
V. Randolph*	0.89	0.00%
V. Reeseville	20.18	0.02%
V. Theresa	18.42	0.02%
C. Beaver dam	185.74	0.18%
C. Columbus*	1.62	0.00%
C. Fox lake	140.39	0.13%
C. Hartford*	24.57	0.02%
C. Horicon	327.67	0.31%
C. Juneau	9.10	0.01%
C. Mayville	114.10	0.11%
C. Watertown*	163.06	0.15%
C. Waupun*	35.07	0.03%
Dodge county Total	105736.39	100.00%

* Community partially located outside of county, acreage only includes portion in the county.

Source: Dodge County Land Resources and Parks Department, July 2012. Wetlands calculations from WI DNR 2006 Inventory.

Figure 1-12, Wetlands
Dodge County, Wisconsin



Source: Dodge County Land Resources and Parks Department, July 2012
DNR Wetland Inventory 2006

water resources are extremely fertile due to runoff of nutrients such as nitrogen and phosphorus. In spring and fall, water is fairly clear, but intense algae blooms are common during the summer months. The fertility of the water combined with shallow water depths make the waterbodies susceptible to winterkill (winter oxygen depletion). When needed to reduce the severe effects of winterkill, lake districts and/or lake associations for Fox Lake, Beaver Dam Lake, Lost Lake, and Lake Emily all operate aeration systems during the winter months (WDNR Fisheries Biologist, 2007 and 2012).

Dodge County lakes are a major source of local fishing opportunity for the angling public. However, the lakes have historically required intensive management effort to produce and maintain such fishing opportunity. All major lakes in Dodge County have undergone chemical treatments to remove rough fish populations that had contributed to loss of habitat for other fish and wildlife. Due to their shallow depth, fertile water and warm water temperatures, rough fish overpopulation is quite common (WDNR Fisheries Biologist, 2007).

Data from recent DNR electrofishing and fyke netting reports (2010 and 2011) indicate that Fox Lake and Beaver Dam Lake offer respectable fisheries for public use and recreation. Electrofishing reports reveal healthy populations of species such as walleye, largemouth bass, bluegill, yellow perch, and black crappie on both Fox Lake and Beaver Dam Lake. Except for a few walleye, few other game fish or panfish were found in Lake Sinissippi – this lake is dominated by various species of rough fish. The most recent electrofishing on Lake Emily was performed in 2006, and showed a healthy population of both largemouth bass and bluegills. Fyke netting reports show that Beaver Dam Lake has a good population of walleye, and growing populations of northern pike, largemouth bass, and channel catfish. Fyke netting reports also show a strong population of northern pike in Lake Emily, with some signs that the fish may be naturally reproducing there (WDNR Fisheries Biologist, 2012).

CHAPTER 2

PLAN DEVELOPMENT PROCESS

Plan Development – Data and Information

The Dodge County Land and Water Resource Management Plan was developed based on data and other information obtained from various local, county, state, federal agency and private organization documents and reports, and from the input of various local, county, state, federal agency and private organization staff and county citizens.

Some of the key documents and reports from which data and information was extracted and considered in the identification and prioritization of resource concerns include the following:

- Dodge County Land and Water Resource Management Plan (2007)
- The State of the Rock River Basin (2002)
- Upper Rock River Watershed Management Plan Appendix (2002)
- Rock River TMDL Final Report, (July 2011)
- Planning Assistance to States, Section 22 Program Alternatives Report, U.S Army Corp of Engineers (2009)
- Water Quality Management Plan Update – Upper Rock River Watershed (2010)
- Water Quality Management Plan Update – East Branch Rock River Watershed (2011)
- WDNR Impaired Waters List (2011)
- WDNR Electrofishing Summary Reports (2006)
- WDNR Electrofishing Summary Reports (2011)
- Lower Grand River Watershed Detail – WDNR Website (2010)
- East-West Milwaukee River Watershed Detail – WDNR Website (2011)
- Center for Watershed Science and Education – UW-Stevens Point (2012)
- Dodge County UWEX Office – Groundwater Well Sample Test Results (1994-2006)
- Dodge County Soil Survey (1980)
- Dodge County Land Resources and Parks Department Year 2030 Comprehensive Plan (2006)
- Dodge County Soil Erosion Transect Survey Results, Dodge County LCD (1999 – 2011)

Other data, information and observations were provided by representatives from various technical agencies, conservation organizations, and private individuals including the following:

- Wisconsin Department of Natural Resources
- Wisconsin Department of Agriculture, Trade and Consumer Protection
- Dodge County Land Resources and Parks Department
- USDA-Natural Resources Conservation Service
- USDA-Farm Services Agency
- University of Wisconsin – Extension
- US-Fish and Wildlife Service
- Dodge County Farmers and Citizens

All data and information was summarized, compiled and forwarded for consideration by members of a Citizens Advisory Committee (CAC) convened by the Dodge County Land Conservation Committee to assist with identifying and prioritizing resource concerns within the county.

Plan Development – Citizen/Public Involvement

The CAC met on January 31, 2012 to identify, group and prioritize resource issues and concerns. The CAC met again on February 28, 2012 to discuss and propose ideas for how some of the identified resource concerns could be best addressed. A draft of the proposed 2012 revised plan was distributed to the CAC on July 30, 2012. The general public was given opportunities to review and comment on the proposed plan via a news release distributed to local news media outlets for general circulation on August 1, 2012.

A public hearing was held for the Dodge County Land and Water Resource Management Plan on October 18, 2012.

CHAPTER 3

SOIL EROSION AND WATER QUALITY CONDITIONS

Surface water quality in Dodge County is impacted by both nonpoint and point sources of pollution. The impact from point sources has been reduced greatly in recent years, presently estimated to represent less than 20% of the total pollutant loading, while nonpoint now accounts for more than 80% of the total pollutant load. Pollutants such as sediments, phosphorus, nitrogen, and bacterial pathogens find their way into surface and ground waters, often times degrading fish and wildlife habitat, and also posing threats to human health and safety. Because of the rural nature of Dodge County, and the fact that agriculture is the dominant land use, it has long been assumed that the majority of nonpoint pollutants can be attributed to agricultural land use activities. This assumption has now been confirmed with the completion of the Rock River Watershed TMDL Final Report in July of 2011. The Rock River Watershed TMDL Final Report indicates that 67% of total phosphorus (TP), and 92% of total suspended solids (TSS) pollutant loadings to surface waters in the watershed is caused by agricultural land uses. There has also been a growing concern in recent years over the potential for nonpoint pollution of surface waters and groundwater from the storage, treatment, discharge, and land spreading of industrial and municipal wastes.

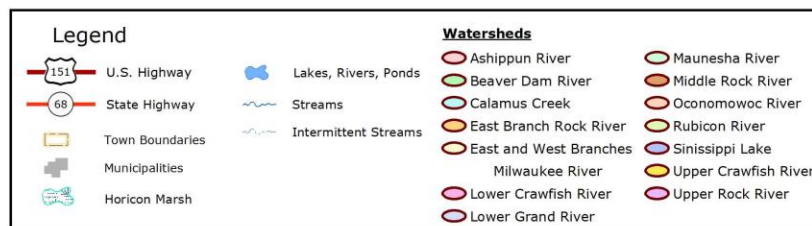
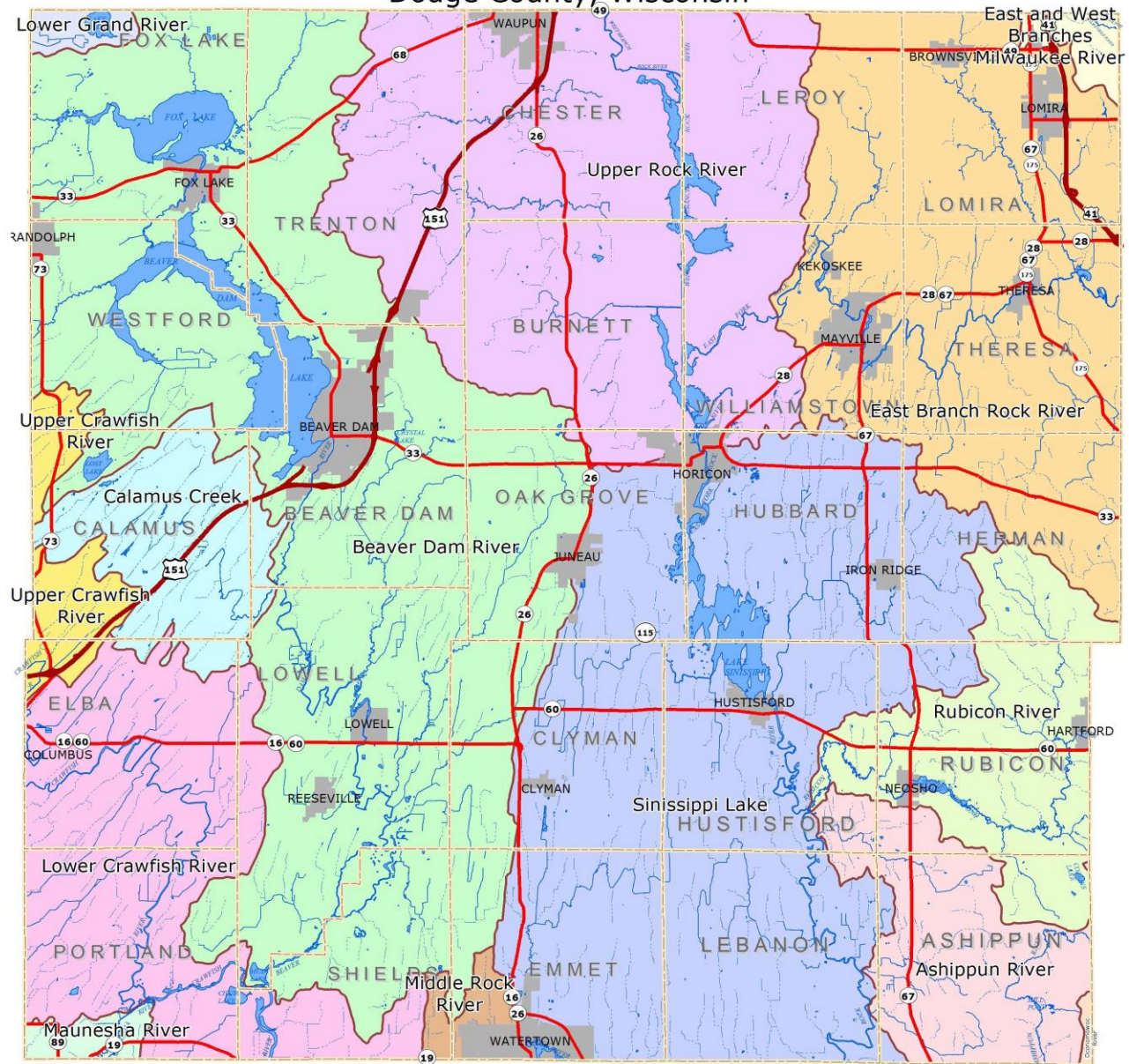
Section 303(d) of the Federal Clean Water Act (CWA) as amended by the Water Quality Act of 1987, Public Law 100-4 requires the Environmental Protection Agency (EPA) and states to develop Total Maximum Daily Loads (TMDL's) for all pollutants violating or causing violation of applicable water quality standards for each impaired water body. A TMDL determines the maximum amount of pollutants that a water body is capable of assimilating while continuing to meet the existing water quality standards. For all the point and nonpoint sources of pollution that cause impairment, such loads are established at levels necessary to meet the applicable standards with consideration given to seasonal variations and margin of safety. TMDL's provide the framework that allows states to establish and implement pollution control and management plans with the ultimate goal indicated in Section 101(a) (2) of the CWA: "water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water, wherever attainable" (WDNR, Rock River TMDL Final Report, July, 2011).

The Wisconsin DNR's most recent impaired waters list identifies 24 waterbodies in Dodge County that are considered impaired for one or more reasons; 19 are rivers or streams, and five (5) are lakes or mill ponds. Eighteen rivers/streams and three (3) lakes/millponds are impaired by sediment/suspended solids; ten rivers/streams and four (4) lakes/millponds are impaired by total phosphorus; and three (3) rivers/streams are impaired by ammonia. It is very likely that other county waterbodies currently not on the impaired waters list would be listed if current water quality monitoring data were to be available. Table 3-1 contains a listing of Dodge County's impaired waters. Figure 3-1 shows the location of specific watersheds in Dodge County.

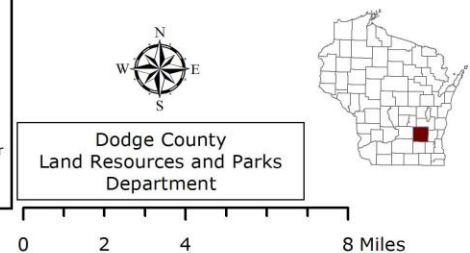
Table 3-1
Dodge County – Section 303(d) Impaired Waters

Waterbody Name	Watershed Basin	Pollutant Types
Alto Creek	Rock River	Sediment/Total Suspended Solids
Baker Creek	Rock River	Sediment/Total Suspended Solids
Beaver Dam River	Rock River	Total Phosphorus/Sediment/Total Suspended Solids
Calamus Creek	Rock River	Total Phosphorus/Sediment/Total Suspended Solids
Casper Creek	Rock River	Sediment/Total Suspended Solids
Davy Creek	Rock River	Unspecified Metals
Dead Creek	Rock River	Total Phosphorus/Sediment/Total Suspended Solids
East Br. Rock River	Rock River	Total Phosphorus/Sediment/Total Suspended Solids
Gill Creek	Rock River	Total Phosphorus/Sediment/Total Suspended Solids/Ammonia
Irish Creek	Rock River	Total Phosphorus/Sediment/Total Suspended Solids/Ammonia
Kummel Creek	Rock River	Total Phosphorus/Sediment/Total Suspended Solids/Ammonia
Lau Creek	Rock River	Sediment/Total Suspended Solids
Maunsha River	Rock River	Total Phosphorus/Sediment/Total Suspended Solids
Mud Creek	Rock River	Sediment/Total Suspended Solids
Park Creek	Rock River	Sediment/Total Suspended Solids
Rock River	Rock River	Total Phosphorus/Sediment/Total Suspended Solids
Schultz Creek	Rock River	Sediment/Total Suspended Solids
Stony Brook	Rock River	Sediment/Total Suspended Solids
West Br. Rock River	Rock River	Total Phosphorus/Sediment/Total Suspended Solids
Fox Lake	Rock River	Total Phosphorus/Sediment/Total Suspended Solids
Beaver Dam Lake	Rock River	Total Phosphorus
Columbus Mill Pond	Rock River	PCB's
Sinissippi Lake	Rock River	Total Phosphorus/Sediment/Total Suspended Solids
Horicon Marsh	Rock River	Total Phosphorus/Sediment/Total Suspended Solids

Figure 3-1, Watersheds, Streams, and Surface Water
Dodge County, Wisconsin



Source: Dodge County Land Resources and Parks Department, July 2012
Watersheds from DNR, Hydrology derived from USGS topographic maps



Soil erosion in Dodge County occurs on cropland, along lakeshores and stream banks, and on residential/commercial construction sites. Although acre for acre construction site and shoreline erosion can be many times greater than cropland erosion, because cropland dominates Dodge County's landscape (over 300,000 acres), the vast majority of soil erosion and sediment delivery can likely be attributed to cropland cultivation practices. Data from Dodge County's annual soil erosion line transect survey conducted from 1999 through 2011 is the primary source of the information regarding soil erosion conditions. On a county-wide basis, the average cropland soil erosion rate is currently determined to be 2.1 ton/acre/year, and approximately 11% of all cropland acres are eroding above tolerable (T) levels. As of 2011, total county cropland soil erosion was calculated to be 663,986 ton per year (Dodge County LCD, 1999-2011). See Figure 3-2 for trends in Dodge County total soil erosion levels.

A more detailed summary of soil erosion and water quality conditions follows and is broken out by the three basins covering Dodge County, including the Upper Rock River Basin, the Upper Fox River Basin, and the Milwaukee River Basin.

Upper Rock River Basin – Soil Erosion and Water Quality Conditions

Middle Rock River Watershed

(Water Quality Conditions) – This 132 square mile watershed originates in south central Dodge County, and comprises a very small part of the total county land area. The Rock River is very wide and low gradient in this reach and carries a heavy sediment load, due partly to the size of the watershed area feeding it. Dodge County's portion of this watershed is dominated by agricultural and open space land uses, although it also includes a portion of the City of Watertown.

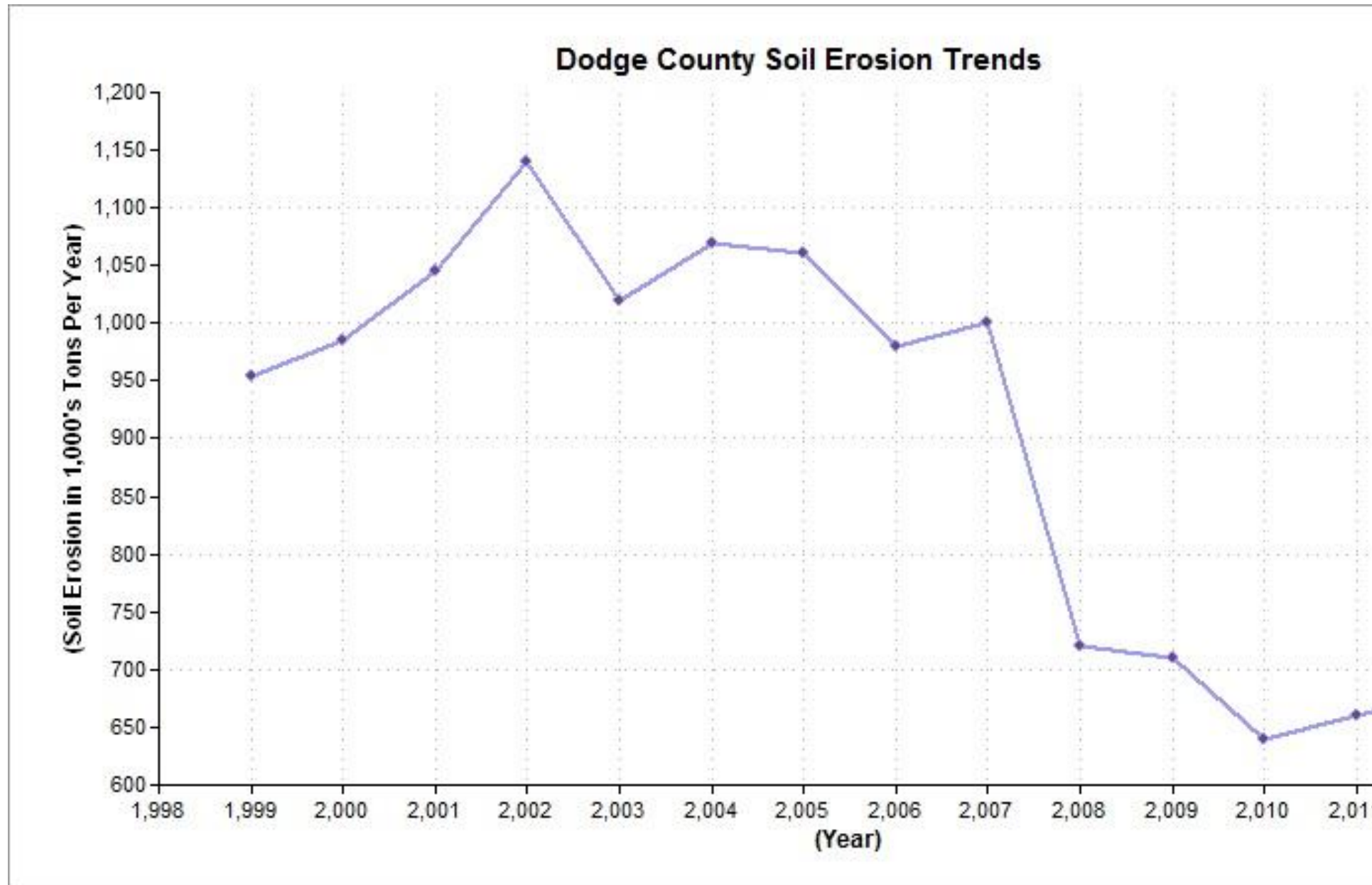
This portion of the Rock River is currently listed as an impaired water on Wisconsin's Impaired Waters List, with water quality impacted by nonpoint sources of pollution, including total phosphorus. This portion of the Rock River has been assigned a designated use of warm water sport fishery, however it currently is not fully supporting that designated use, currently only able to support a warm water forage fishery (WDNR, Rock River TMDL Final Report, July, 2011).

(Soil Erosion Conditions) – Soil erosion in the Middle Rock River Watershed is currently considered under control. The average annual cropland soil erosion rate currently stands at 1.7 ton/acre/year. Less than 5% of all cropland acres are determined to be eroding above tolerable (T) levels, and at least 85% of all cropland fields maintain 30% or more crop residue cover on the soil surface after planting (Dodge County LCD, 2011).

Lower Crawfish River Watershed

(Water Quality Conditions) – The Crawfish River below Columbus is wide, shallow and low gradient. The river was once narrow and deeper and supported stands of wild rice. Primarily agricultural land use over the past 150 years has altered the river to its present condition. The

Figure 3-2



stream partially supports a viable warm water sport fishery. The river's shallowness, bank erosion and lack of cover is suspected of limiting habitat for adult game fish in reaches that have been surveyed. Channel catfish and smallmouth bass dominate the sport fishery (WDNR, 2002). Water quality of all stream segments, including Mud Creek, Nolan Creek, the Crawfish River itself, and the Danville Millpond is being impacted to some degree by nonpoint source pollutants from both sediments/total suspended solids and total phosphorus (WDNR, Rock River TMDL Final Report, July 2011). Mud Creek is currently included on the Wisconsin DNR's most recent listing of impaired waters.

(Soil Erosion Conditions) – Soil erosion in the Lower Crawfish River Watershed is slightly above the average for Dodge County. The average annual cropland soil erosion rate currently stands at 2.4 ton/acre/year. Approximately 12% of all cropland acres are determined to be eroding above tolerable (T) levels, and about 42% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

Beaver Dam River Watershed

(Water Quality Conditions) – The Beaver Dam River Watershed is located primarily in Dodge County, with smaller segments lying in Columbia, Green Lake, and Fond du Lac Counties. As with other watersheds, land use is primarily agricultural, with dairy farming and cash grain cropping predominant. Past water quality monitoring indicated that polluted runoff effects are severe on most streams and lakes. Because of this, the Wisconsin DNR selected the watershed as a priority watershed project in 1990. This project was completed in December of 2006. Streams that drain the Beaver Dam River Watershed include Alto Creek, Beaver Creek, The Beaver Dam River itself, Casper Creek, Cambra Creek, Crystal Creek, Drew Creek, Lau Creek, Mill Creek, Park Creek, Pratt Creek, Schultz Creek, and Shaw Brook. Lakes that are located within the Beaver Dam River Watershed include Beaver Dam Lake, Chub Lake, Crystal Lake, Fox Lake, Lost Lake, Lowell Millpond, and Mud Lake.

While many improvements were realized under the Beaver Dam River Priority Watershed Project, water quality of streams and lakes alike continues to be impacted by various pollutants, including total phosphorus and sediment/total suspended solids. High levels of organic nitrogen and nitrate/nitrite that exceed statewide averages have also been found recently in the surface waters of Drew Creek (Drew Creek Monitoring Project Final Report, December 2009). Water quality impairments caused by pollutants include degraded fish and wildlife habitat, low dissolved oxygen, sediment deposition, high water turbidity, excess algal growth, and eutrophication (WDNR, Rock River TMDL Final Report, July 2011).

There are indications that water quality conditions may have improved enough over the past 4-5 years in some water bodies to sustain stronger populations of both gamefish and panfish. Electrofishing surveys were performed by the Wisconsin DNR on both Beaver Dam Lake and Fox Lake in the fall of 2011. Survey results show that there has been substantial improvement in both total catch numbers as well as the fish-per-hour catch rates for gamefish species such as walleye and largemouth bass, and for panfish species such as bluegill, yellow perch, and black crappie, as compared to electrofishing surveys conducted on these lakes in 2008. A fall 2011 electrofishing survey on Lost Lake also showed good total catch numbers and fish-per-hour

catch rates for both bluegill and yellow perch. Additionally, fyke netting performed on Beaver Dam Lake in 2010 has also shown growing populations of gamefish such as northern pike, walleye and largemouth bass as well as growing populations of panfish such as bluegill, black crappie and yellow perch (WDNR, Electrofishing Summary Reports, 2011).

Another evidence of improving water quality in Dodge County is the declining phosphorus levels that have been found in recent years in Fox Lake. Water samples analyzed in year 2000 showed phosphorus levels in the lake averaging around 150 ug/liter. Water samples analyzed during 2012, and for several years prior, have showed phosphorus levels averaging around 100 ug/liter. While this improvement is good news, these levels still exceed water quality standards of 40 ug/liter, so more improvement is still needed.

Several water bodies within this watershed appear on the Wisconsin DNR's Impaired Waters List, including Alto Creek, Beaver Dam River, Casper Creek, Fox Lake, Lau Creek, Park Creek, Schultz Creek, and Beaver Dam Lake. Most of these water bodies have an assigned a default biological designated use rating of warm water sport fishery, except for Alto Creek which has a designated use of limited forage fishery. All water bodies are currently not supporting the full potential of their designated use (WDNR, Rock River TMDL Final Report, July, 2011).

(Soil Erosion Conditions) – Soil erosion in the Beaver Dam River Watershed was reduced as a result of best management practice installations under the Beaver Dam River Priority Watershed Project. The average annual cropland soil erosion rate has been further reduced over the past five years, and currently stands at 2.1 ton/acre/year, the same as the county average. Only 6% of all cropland acres are determined to be eroding above tolerable (T) levels, and about 31% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

Calamus Creek Watershed

(Water Quality Conditions) – Calamus Creek is a small watershed in west central Dodge County consisting only of Calamus Creek. The watershed is approximately 30 square miles, and the land use is approximately 67% agricultural. Calamus Creek is currently on the Wisconsin DNR's 2012 Impaired Waters List. Although current information regarding the condition of this watershed is limited, it has been determined that the water quality of the creek is impacted by pollutants such as total phosphorus and sediment/total suspended solids. Calamus Creek has a default biological designated use rating of warm water sport fishery, although it is currently not supporting the full potential of this designated use, currently only having a limited forage fishery (WDNR, Rock River TMDL Final Report, July 2011).

(Soil Erosion Conditions) – The average annual cropland soil erosion rate in the Calamus Creek Watershed currently stands at 2.7 ton/acre/year. Approximately 10% of all cropland acres are eroding above tolerable (T) levels, and about 38% of all cropland fields maintain at least 30% crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

Mauneshia River Watershed

(Water Quality Conditions) – Dodge County’s portion of the Mauneshia River Watershed covers a surface area of less than four (4) square miles. Agriculture is the dominant land use, and pollutants such as total phosphorus and sediments/total suspended solids are thought to be the cause for water quality impairments including degraded fish and wildlife habitat and low dissolved oxygen. The two stream segments located in Dodge County include Stony Brook and a section of the Mauneshia River itself. Both streams have been given a default biological use designation of warm water sport fishery, but both streams are currently not supporting that potential biological use rating. Stony Brook currently supports only a limited forage fishery (WDNR, Rock River TMDL Final Report, July 2011).

(Soil Erosion Conditions) – Dodge County Land Conservation Department’s county-wide soil erosion transect survey does not include any sample points within this watershed, and therefore no modeled erosion data is available. It could be assumed that cropland soil erosion conditions within this watershed are likely quite comparable to the adjoining Lower Crawfish River Watershed.

Upper Crawfish River Watershed

(Water Quality Conditions) – The majority of this watershed lies within Columbia County. Dodge County’s portion covers approximately a dozen square miles of surface area in west central Dodge County. The major land use in the watershed is farming, either dairy, cash crops or feeder animals – similar to other watersheds in the basin. The main stem of the Crawfish River in this watershed has been given the biological use designation of warm water sport fishery (WDNR, 2002). This portion of the Crawfish River is impacted to some degree by nonpoint source water pollutants from both sediments/total suspended solids and total phosphorus (WDNR, Rock River TMDL Final Report, July 2011).

(Soil Erosion Conditions) – This watershed currently has an average annual cropland soil erosion rate of 2.7 ton/acre/year. Approximately 14% of all cropland acres are eroding above tolerable (T) levels, and about 39% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

Sinissippi Lake Watershed

(Water Quality Conditions) – A large portion of this 237 square mile watershed lies within Dodge County, stretching from the dam at Horicon downstream to the Watertown dam. Land use is predominantly agricultural. Primary tributaries to the main stem of the Rock River in this watershed include Baker Creek, Clyman Creek, Dead Creek, Lentz Creek, Neda Creek, Oliver Creek, Silver Creek, Wildcat Creek and Woodland Creek. Very little data is presently available regarding the water quality condition of many of the water bodies in this watershed, with the exception of Baker Creek, Dead Creek, the Rock River from the dam in Hustisford to the Ashippun River, and also Lake Sinissippi. All four of these water bodies are listed on the Wisconsin DNR’s 2012 Impaired Waters List. Baker Creek, the Rock River, and Lake Sinissippi have all been given a default biological use designation of warm water sport fishery, but none

of these water bodies are currently supporting that potential biological use rating. Dead Creek has been given a biological use designation of limited forage fishery, but is also currently not supporting that potential biological use rating (WDNR, Rock River TMDL Final Report, July, 2011).

An eight year effort by the Lake Sinissippi Improvement District to protect recreational waters of Lake Sinissippi from fecal contamination caused by Canada Geese has resulted in a significant reduction in E. coli contaminant levels in lake water samples. Figure 3-3 shows this downward trend in E. coli contamination (Source: Lake Sinissippi Improvement District, 2012).

Sinissippi Lake is a 2,855 acre impoundment on the main stem of the Rock River, with a drainage area of 511 square miles. Historically this was a rapids area of the Rock River before the stretch was dammed. The lake has a maximum depth of eight (8) feet (at the dam), with an average depth of 4 to 4.5 feet. It is a shallow, unstratified river impoundment with conditions of turbidity, planktonic algae, and reduced oxygen content. Water quality data collected by the Lake Sinissippi Improvement District (LSID) show that the lake is highly eutrophic with summer levels of chlorophyll *a* of 180.5 ug/l, total phosphorus of 0.26 mg/l, total Kjeldahl nitrogen of 3.03 mg/l, total suspended solids of 44 mg/l, total 5-day BOD of 16 mg/l, and Secchi disk depth of less than 1 foot. The lake has been slowly filling with sediment, with depositions ranging from 1-12 feet (Planning Assistance to States, Section 22 Program Alternatives Report, U.S. Army Corp of Engineers, September 2009).

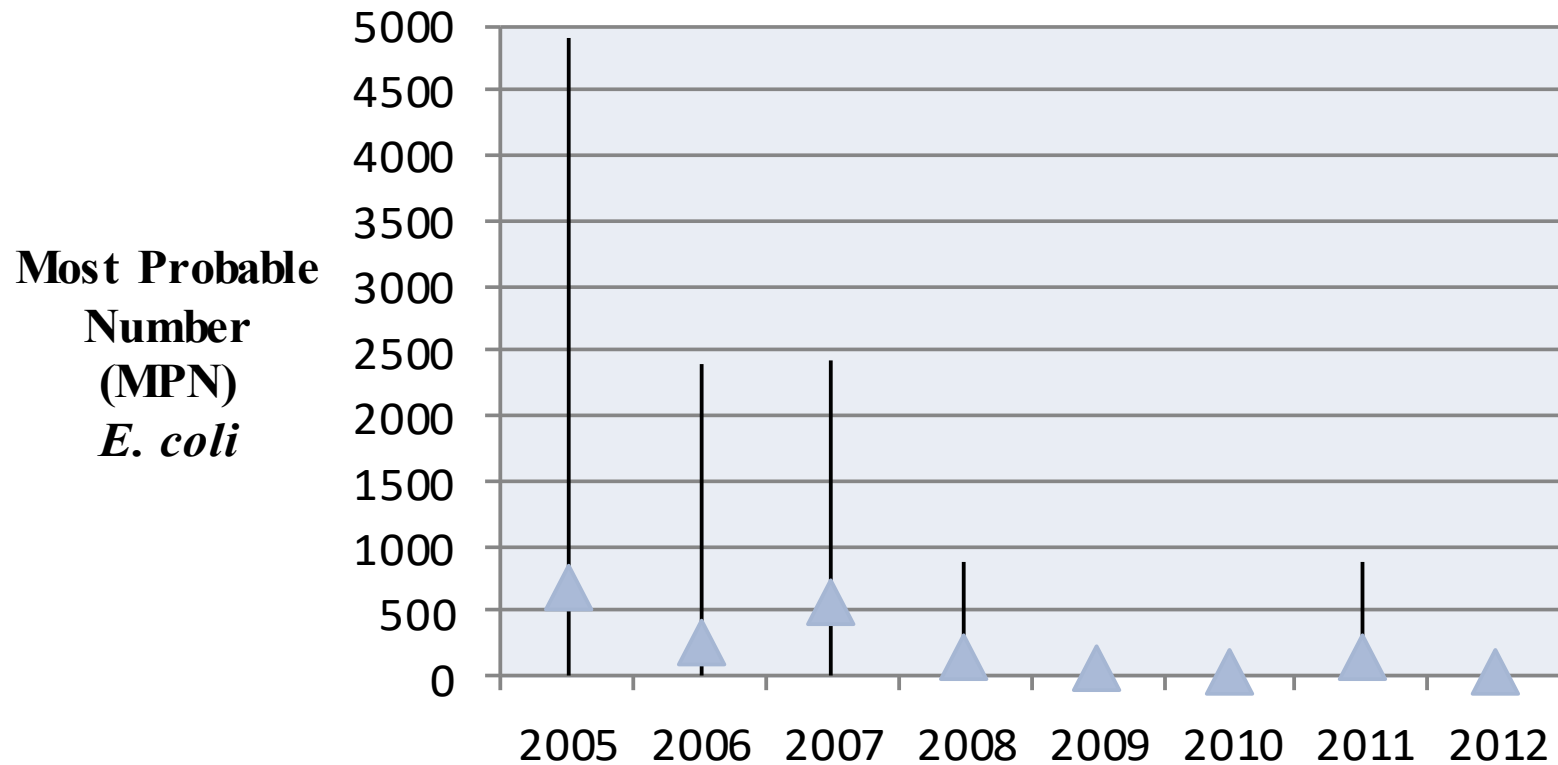
A fall 2011 electrofishing survey of Lake Sinissippi appears to confirm that, in its current condition, the lake is not able to support its warm water sport fishing biological use rating. Total catch numbers for common panfish species such as bluegill, crappie and yellow perch ranged from 0 – 8 fish caught over a 0.8 hour time span. A total of 34 walleye were caught over a 3.3 hour time span. The total catch was dominated by rough fish species, accounting for 88% of the total numbers of fish caught (WDNR – Electrofishing Summary Reports, 2011).

(Soil Erosion Conditions) – This watershed currently has an annual cropland soil erosion rate of 2.1 ton/acre/year. Approximately 13% of all cropland acres are eroding above tolerable (T) levels, and about 33% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

Ashippun River Watershed

(Water Quality Conditions) – The Ashippun River Watershed covers the extreme southeastern portion of Dodge County, running through landscape which is still dominated by agricultural and open space land uses, but one which has undergone substantial residential development over the years. Stream segments and other water bodies located either partially or entirely in Dodge County include the Ashippun River itself, Davy Creek, Dawson Creek, Mud Run Creek, and the Alderley Millpond. Both the Ashippun River and Davy Creek were classified as warm water sport fisheries in 2002, but were only partially supporting that biological use designation. Both Dawson Creek and Mud Run Creek were classified as warm water forage fisheries in 2002, but were only partially supporting that biological use designation. All water bodies in this watershed are being impacted to some degree by nonpoint source water pollutants from both

Figure 3-3



**Water Quality Monitoring of Public Health Bacteriological Parameters
at Neider Park Landing, Hustisford 2005-2012
(Source: Lake Sinissippi Improvement District)**

sediments/total suspended solids and total phosphorus (WDNR, Rock River TMDL Final Report, July 2011).

(Soil Erosion Conditions) – This watershed currently has an average annual cropland soil erosion rate of 1.7 ton/acre/year. Approximately 11% of all cropland acres are eroding above tolerable (T) levels, and about 44% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

Rubicon River Watershed

(Water Quality Conditions) – Approximately one half of the Rubicon River Watershed lies within Dodge County, with the other half lying within Washington County. The primary land use in Dodge County's portion is agricultural, although some urbanization is occurring near Hartford and around Neosho. Stream segments and other water bodies located either partially or entirely within Dodge County include the Rubicon River itself, Butler Creek, Hepp Creek, Mud Lake Creek, Collins Lake, and the Neosho Millpond. The Rubicon River itself was classified as a warm water sport fishery in 2002, but was only partially supporting that biological use designation. Butler Creek was classified as a warm water forage fishery in 2002, but also was only partially supporting that biological use designation. Hepp Creek and Mud Lake Creek had unknown classifications (WDNR, 2002). All water bodies in this watershed are being impacted to some degree by nonpoint source water pollutants from both sediments/total suspended solids and total phosphorus (WDNR, Rock River TMDL Final Report, July 2011).

(Soil Erosion Conditions) – This watershed currently has an average cropland soil erosion rate of 2.0 ton/acre/year. Approximately 8% of all cropland acres are eroding above tolerable (T) levels, and about 44% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

Upper Rock River Watershed

(Water Quality Conditions) – The southern half of this watershed lies within Dodge County. The approximate size of the entire watershed is 259 square miles. As in most other watersheds in the Rock River Basin, the streams in this watershed have low gradients. The primary land use is agricultural (66%), but urbanization continues to grow. Stream segments and other water bodies located either partially or entirely within Dodge County include Conners Ditch, Libby Creek, Luebke Ditch, Main Ditch, Mieske Ditch, Mill Creek, Plum Creek, South Branch Rock River, Spring Brook, Townline Ditch, West Branch Rock River, and the Horicon Marsh. Many stream and river segments are classified as limited forage fisheries or warm water sport fisheries. Most streams and rivers are being impacted to some degree by nonpoint source pollutants from both sediments/total suspended solids and total phosphorus. Water quality impairments include degraded fish and wildlife habitat and low dissolved oxygen. Water bodies within this watershed that currently appear on the Wisconsin DNR's Impaired Waters List include the South and West Branches of the Rock River, and the Horicon Marsh (WDNR, Rock River TMDL Final Report, July 2011).

The Horicon Marsh consists of both the Horicon National Wildlife Refuge (HNWR), which is managed by the U.S. Fish and Wildlife Service, and the Horicon Marsh State Wildlife Area (HMWA), which is managed by the Wisconsin DNR. The HNWR covers 20,976 acres in the northern 2/3 of the marsh, and the HMWA covers 10,928 acres in the southern 1/3 of the marsh, for a combined total of 31,904 acres. The size of the marsh makes it one of the largest freshwater wetlands in the United States. There are 216 species of birds which use Horicon Marsh, as well as 32 other bird species which have been reported in the marsh. There is also a wide variety of fish, aquatic animals and mammals which utilize the marsh. Due to the extremely large size of the marsh, as well as other factors such as the diversity of flora and fauna and the large populations of waterfowl it supports, Horicon Marsh has been designated as a “Wetland of International Importance” (WDNR, 2010 Water Quality Management Plan Update – Upper Rock River Watershed, May, 2010).

The primary sources of water to the HNWR are the West and South Branches of the Rock River, and the primary source of water to the HMWA is the East Branch Rock River. The most severe problem threatening the marsh is siltation due to soil erosion from the surrounding watersheds, as determined by water quality monitoring conducted by the Rock River Partnership in 1998 and 1999. Historic Wisconsin DNR documents have stated that heavy silt loads, particularly from the East Branch Rock River, contribute to much shallower waters in many of the marsh’s bays and channels. The largest source of sediment to the marsh is soil erosion from agricultural lands. Farming practices such as wetland drainage, fall plowing, farming too close to stream banks, farming on steep slopes, livestock grazing, and stream bank erosion all contribute to the marsh’s siltation problems. The high inflow of nutrients (phosphorus and nitrogen) into Horicon Marsh from surrounding farm fields where manure and other fertilizers are spread is also a serious problem. Nonpoint source pollution needs to be addressed in a comprehensive manner if the problems of the marsh are going to be resolved. Other problems in the marsh are rough fish infestation, invasive plant species infestation, and loss of wildlife habitat (WDNR, 2010 Water Quality Management Plan Update – Upper Rock River Watershed, May 2010).

(Soil Erosion Conditions) – This watershed currently has an average cropland soil erosion rate of 2.1 ton/acre/year. Approximately 15% of all cropland acres are eroding above tolerable (T) levels, and only about 31% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

East Branch Rock River Watershed

(Water Quality Conditions) – The East Branch Rock River lies directly east of the Horicon Marsh, with the western portion of the watershed in Dodge County and the eastern portion in Washington County. The primary land use is agriculture (74%). Theresa Marsh Wildlife Area and Allenton Wildlife Area are large wetland complexes in the watershed. The East Branch Rock River meanders through almost the entire width of the watershed, approximately 45 miles. The East Branch Rock River is the primary source of water for the state owned portion of the Horicon Marsh, and is also the main source of sediment loading to the marsh (WDNR, 2002). The East Branch Rock River has also been determined to be the greatest contributor of

sediment and phosphorus loads per acre of any watershed within the Upper Rock River Basin (WDNR, Rock River TMDL Final Report, July 2011).

Some reductions in phosphorus loading appear to have occurred in the East Branch Rock River based on lower average phosphorus concentrations found in water quality samples taken during the period of 2009-2011, as compared with water quality samples taken during the period of 1997-2000. See Figure 3-4 (Source: Dan Heim, WDNR, Horicon, 2012).

There are over 315 miles of rivers and streams in this watershed; 82 miles of which have had water quality assessments performed by the Wisconsin DNR. Of these 82 miles, only about six are meeting their fish and aquatic life use designations and are considered to be in “good” condition; while over 70% are not meeting their fish and aquatic life designated uses, and are considered to be in “poor” condition. Stream segments located either partially or entirely within Dodge County include the East Branch Rock River itself, Fink Creek, Kummel Creek, Lomira Creek, Gill Creek, Irish Creek, the Kekoskee Millpond, Limestone Creek, the Lomira Millpond, the Lower and Upper Mayville Millponds, the Theresa Marsh, and the Theresa Millpond. Most streams and rivers are classified as either limited forage fishery or warm water sport fishery, except for Gill Creek and Irish Creek which are both classified as class II trout streams (WDNR, 2011 Water Quality Management Plan Update – East Branch Rock River Watershed, December 2011). Water bodies that currently appear on the Wisconsin DNR’s Impaired Waters List are the East Branch Rock River, Gill Creek, Irish Creek, and Kummel Creek.

(Soil Erosion Conditions) – This watershed currently has an average cropland soil erosion rate of 2.0 ton/acre/year. Approximately 12% of all cropland acres are eroding above tolerable (T) levels, and about 34% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

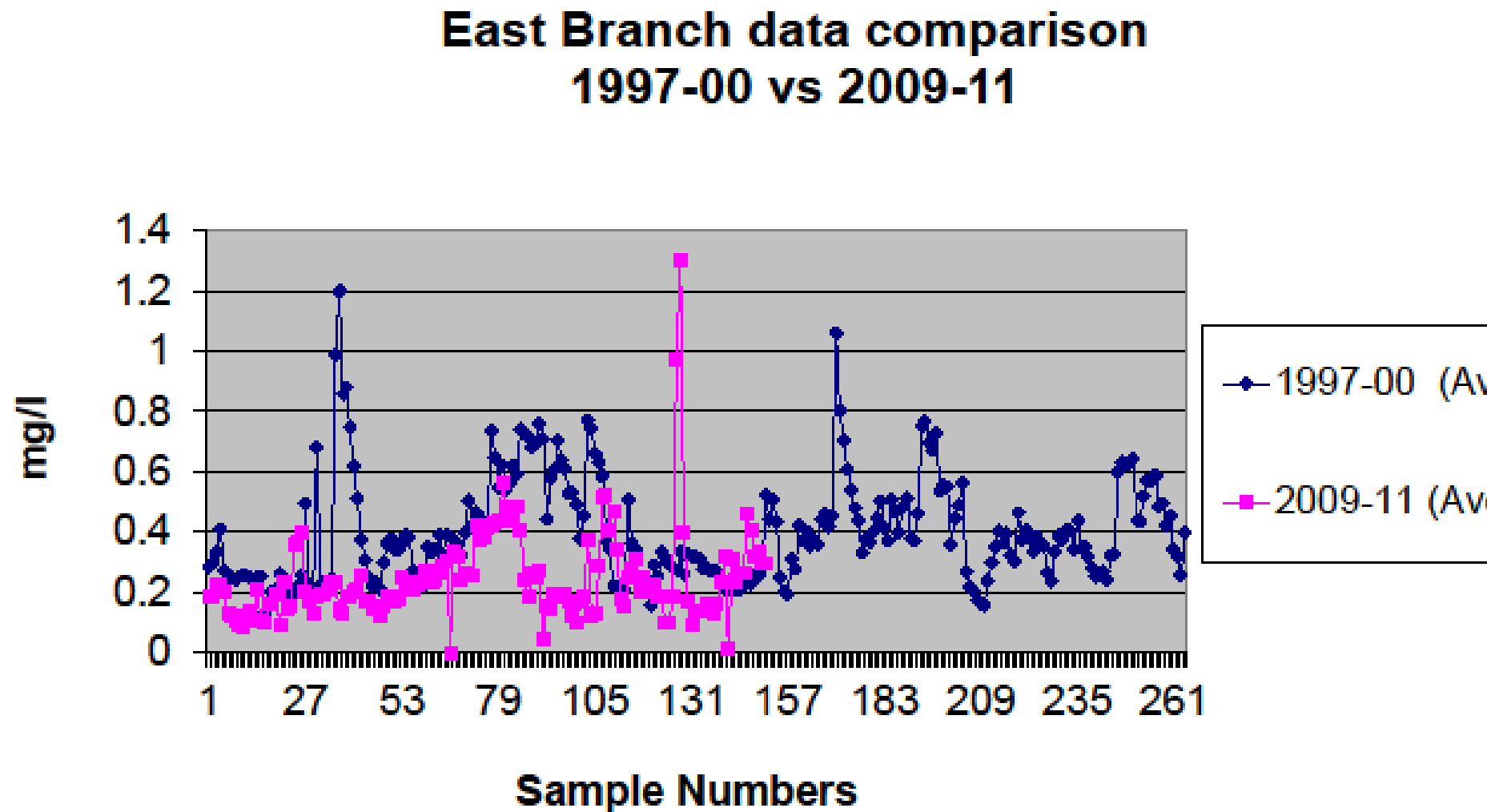
Upper Fox River Basin – Soil Erosion and Water Quality Conditions

Lower Grand River Watershed

(Water Quality Conditions) – Less than four (4) square miles comprise the portion of the Lower Grand River Watershed located in Dodge County. The watershed is rural in nature, with agriculture being the primary land use (WDNR, 2001). The primary surface water feature is Lake Emily, a 268 acre lake with a maximum depth of 14 feet. Little data exists regarding the water quality of Lake Emily, although it continues to be a popular fishing lake. The lake outlet travels westward and is a tributary to the Lower Grand River.

Lake Emily does not have a specific biological use designation, but is considered as “fishable and swimmable”. Average Secchi disk readings during the months of July and August of most years is about two (2) feet. The lake has historically been classified as eutrophic; having problems with degraded fish and wildlife habitat, high turbidity levels, and seasonal low dissolved oxygen levels (WDNR Website, Lower Grand River Watershed Detail, 2010). Lake Emily has historically sustained a respectable fishery comprised of gamefish such as largemouth bass and northern pike, as well as panfish such as bluegills and yellow perch (WDNR, Electrofishing Summary Report, 2006).

Figure 3-4



(Source - Wisconsin DNR - D)

(Soil Erosion Conditions) – This watershed currently has an average annual cropland soil erosion rate of 2.5 ton/acre/year. (Note: Only four soil erosion sample points are visited once per year to calculate erosion levels, and therefore calculation results may fluctuate and be somewhat misleading). Approximately 25% of all cropland acres are eroding above tolerable (T) levels, and about 33% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

Milwaukee River Basin – Soil Erosion and Water Quality Conditions

(Water Quality Conditions) – Less than five (5) square miles comprise the portion of the East-West Branch Milwaukee River Watershed in Dodge County. The primary land use in Dodge County's portion of this watershed is agriculture, with some scattered residential development. Nutrients and sediment from agricultural runoff and stream modification have impacted water quality. This section of the Milwaukee River has historically been classified as a warm water sport fishery (WDNR Website, East-West Milwaukee River Watershed Detail, 2011).

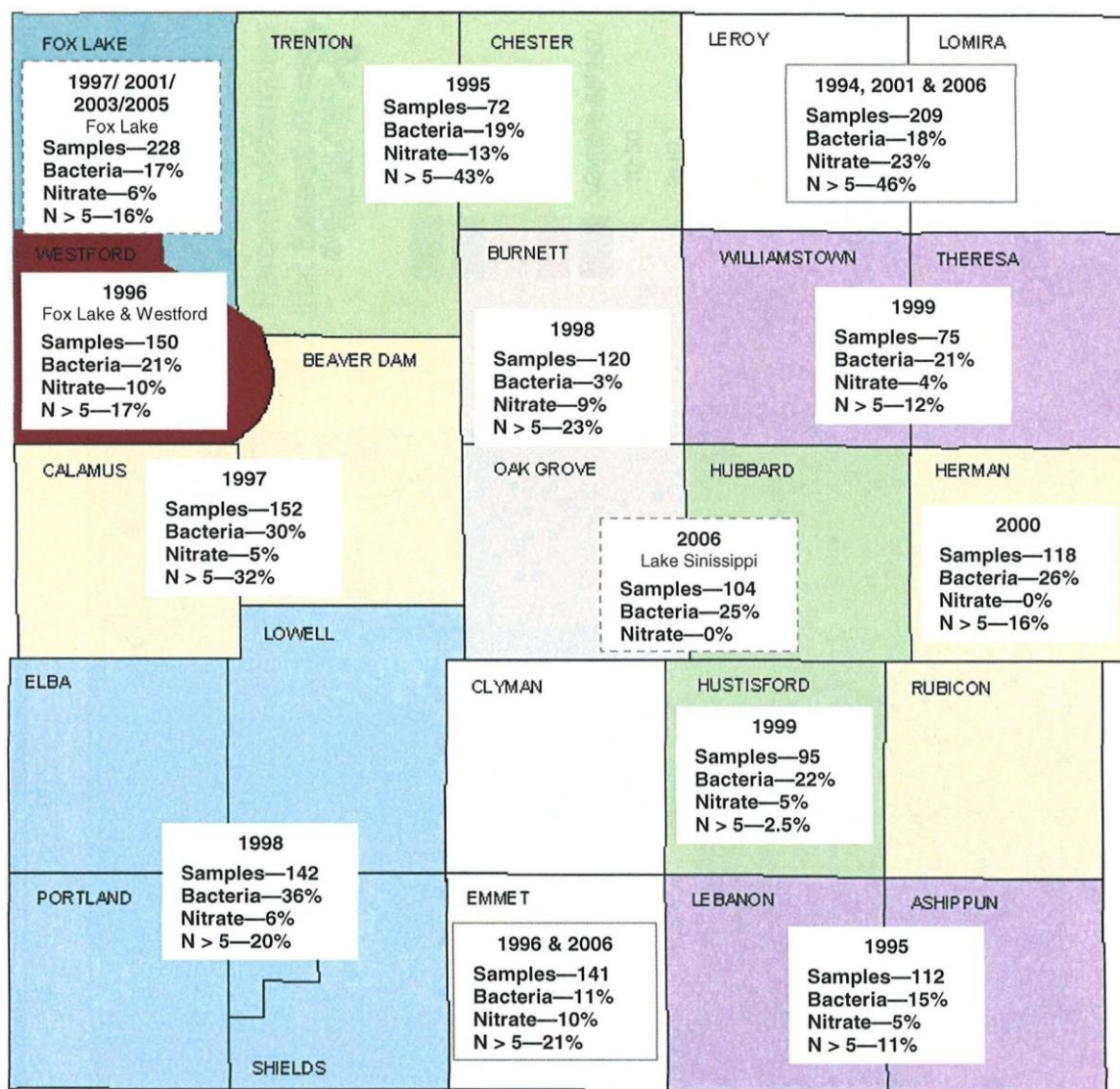
(Soil Erosion Conditions) – This watershed currently has an average cropland soil erosion rate of 1.8 ton/acre/year. (Note: Only three soil erosion sample points are visited once per year to calculate erosion levels, and therefore calculation results may fluctuate and be somewhat misleading). Less than 5% of all cropland acres are determined to be eroding above tolerable (T) levels, and about 33% of all cropland fields maintain 30% or more crop residue cover on the soil surface after spring planting (Dodge County LCD, 2011).

Groundwater Quality Conditions – (All Basins)

Assessing the quality of Dodge County's groundwater resources is more difficult than assessing surface water quality due to the "hidden" nature of the resource. Even so, past well water sampling activities do reveal, to some extent, what is happening to the water that "lies below".

As of 2011, there are over 5,000 known rural private drinking water wells located across Dodge County. Over 2,400 private well water samples analyzed since 1986 under a private well testing program coordinated by the Dodge County University of Wisconsin Cooperative Extension service reveal that, on a county-wide scale, 8.8 % of wells had nitrate levels exceeding the health standard for nitrates (10 mg/liter), 21 % of wells tested positive for total coliform bacteria, and approximately 10% of 400 samples analyzed for E. coli bacteria tested positive for this contaminant (UW-Stevens Point, 2012). Well water samples analyzed in 2005 and 2006 from northeastern Dodge County, (an agricultural area having many karst features underlying the surface of the land) indicated over 35% of private wells may be contaminated by total Coliform bacteria, and over 24% may have nitrate levels exceeding the health standard for nitrates (Dodge County UWEX, 2006). Figures 3-5, 3-6, and 3-7 provide more details regarding the results of private well water sample analysis. Table 3-2 provides detailed results of private well water sampling activities in Dodge County between 1986 and 2012.

Figure 3-5

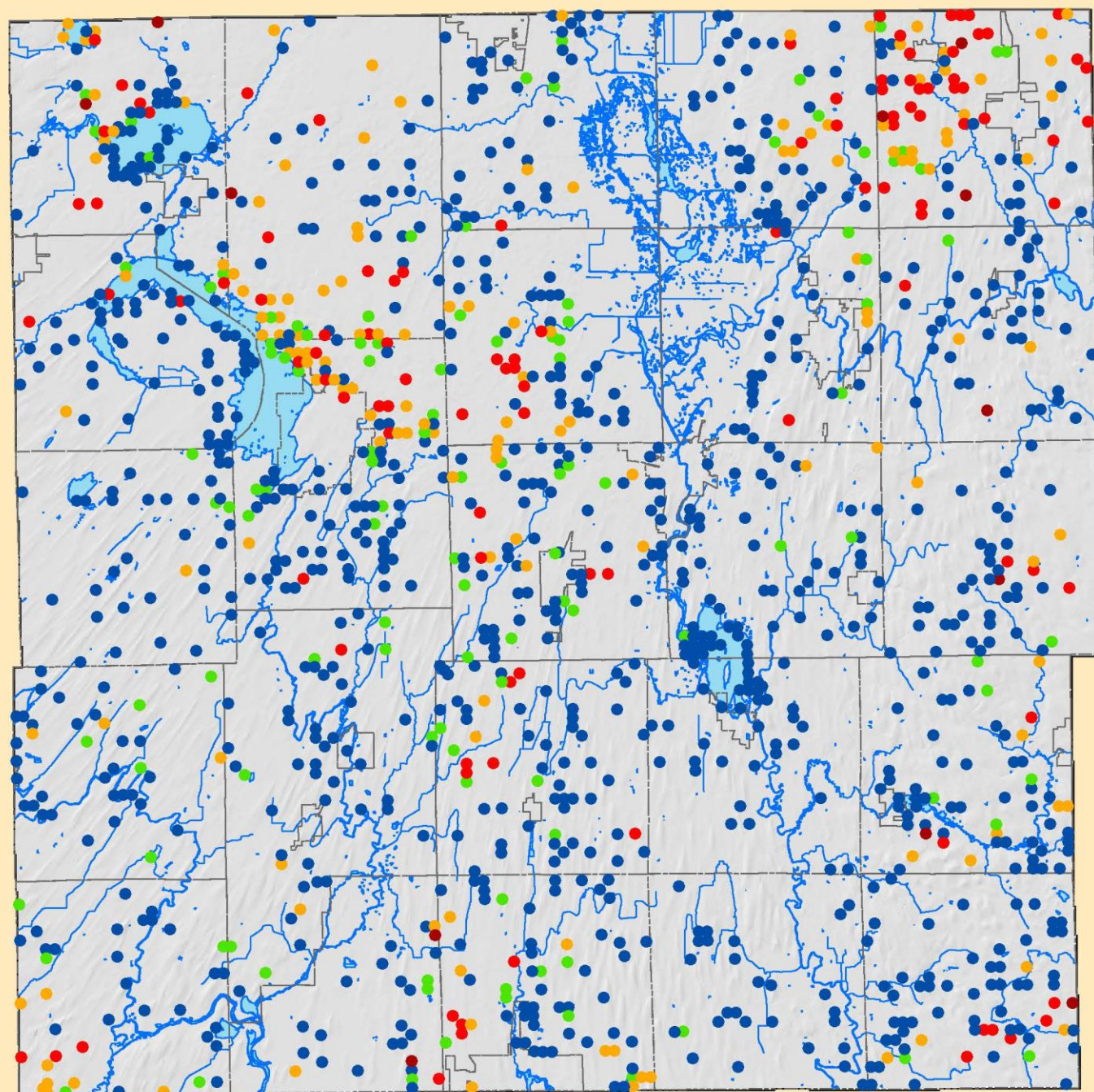


Total samples tested through program since 1994 = 1,719

These test results, along with the results from test kits sold through the UW-Extension office, indicate that over 20% of the private wells in Dodge County test positive for total Coliform bacteria, and over 8% exceed the health standard for nitrates (10 mg/l).

Based on the number of households using private well water, as many as 5,000 people in Dodge County may be exposed to unsafe drinking water.

Figure 3-6



Dodge County

Nitrate-N
Concentration
(mg/L)

- Less than 2
- 2-5
- 5-10
- 10-20
- Greater than 20



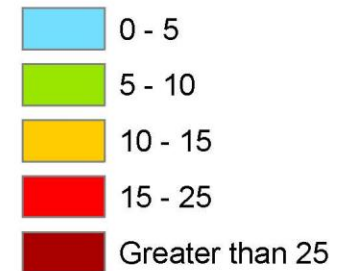
2012



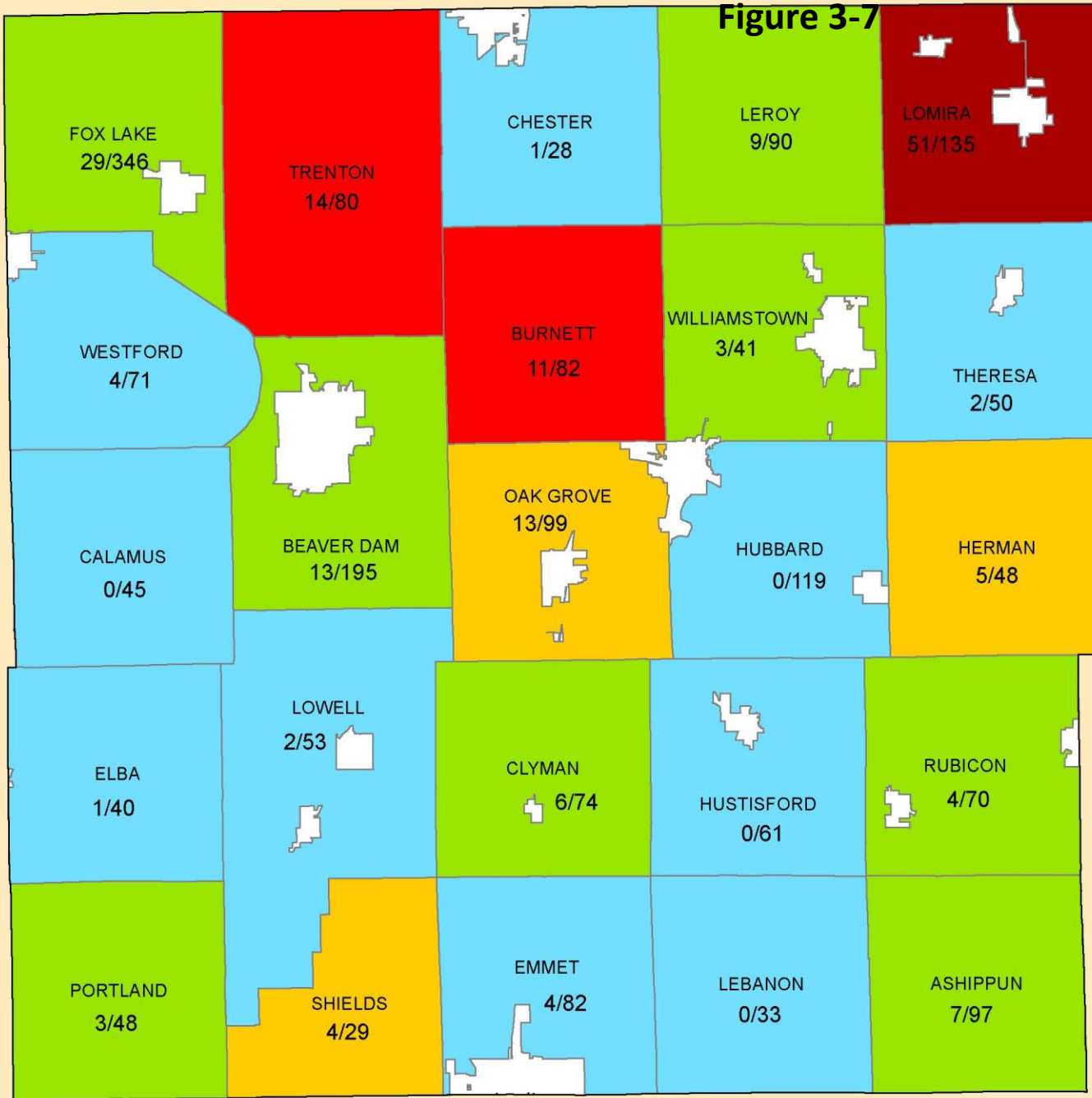
Figure 3-7

Dodge County

Percent of Samples
that Exceed 10 mg/L
Nitrate-N



2012



Disclaimer: This map does not represent a scientifically conducted study.

Table 3-2

Summary

UWEX Private Well Project

Dodge County

3/13/2012

4:49 PM

Total Number Samples: 2440

Sample Dates: 11/10/1986 to 2/21/2012

Reason for Test		Last Test (yr)		Problems		Treatment Sys		Depth (ft)		Well	Casing	Water	Well Diam (in)	
Curious	2 %	Never	3 %	Color	10 %	Softener	73 %	... 25	<1%	<1%	10%	...	3	<1%
Problems	<1 %	< 1	6 %	Taste	14 %	R/O	<1%	26-50	2%	8%	8%	4 - 9	65 %	
Regular	<1 %	1 - 2	7 %	Odor	17 %	Carb Filt	1%	51-100	10%	14%	8%	10 - 18	<1%	
Required	<1 %	2 - 5	16 %	Corr	4 %	Neutral	0%	101-150	16%	5%	2%	18 +	<1%	
Bac Retest	<1 %	5 - 10	15 %	Health	2 %	Part Filt	3%	151-200	8%	2%	<1%			
Disinfect	0 %	10 +	9 %	Other	10 %	Iron Filt	5%	201 ...	6%	2%	<1%			
Infant...	<1 %	Unk	17 %	None	43 %	Other	1%							
Other	0 %													

pH

... 5.00	0	0 %
5.01 - 6.00	1	<1 %
6.01 - 7.00	10	<1 %
7.01 - 8.00	1749	78 %
8.01 - 9.00	491	22 %
9.01 ...	0	0 %

Avg: 7.69 for 2251 Samples

Conductivity (umhos/cm)

... 100	6	<1 %
101 - 250	4	<1 %
251 - 500	116	5 %
501 - 750	984	44 %
751 - 1000	822	37 %
1001 ...	318	14 %

Avg: 802 for 2250 Samples

Alkalinity (mg/L CaCO3)

... 50	7	<1 %
51 - 100	2	<1 %
101 - 200	37	2 %
201 - 300	647	29 %
301 - 400	1432	64 %
401 ...	126	6 %

Avg: 322 for 2251 Samples

Total Hardness (mg/L CaCO3)

... 50	214	10 %
51 - 100	9	<1 %
101 - 200	37	2 %
201 - 300	231	10 %
301 - 400	781	35 %
401 ...	979	43 %

Avg: 364 for 2251 Samples

Nitrate (mg/L as N)

None Detected	1089	48 %
... 2.0	492	22 %
2.1 - 5.0	209	9 %
5.1 - 10.0	284	12 %
10.1 - 20.0	182	8 %
20.1 ...	18	<1 %

Avg: 2.7 for 2274 Samples

Chloride (mg/L)

None Detected	51	2 %
... 10	576	26 %
11 - 50	1079	48 %
51 - 100	365	16 %
101 - 200	141	6 %
201 ...	43	2 %

Avg: 40.6 for 2255 Samples

Saturation Index

... -3.0	2	<1 %
-2.9 - -2.0	9	<1 %
-1.9 - -1.0	126	6 %
-0.9 - 0.0	78	3 %
0.1 - 1.0	1754	78 %
1.1 ...	279	12 %

Avg: 0.6 for 2248 Samples

Coliform Bacteria

Bact Samples	2372	
Pos Bacteria	499	21 %

E. coli Bacteria

E. coli Samples	392	
Pos E. coli	39	10 %

Atrazine Screen* (ppb)

None Detected	343	80 %
... 0.3	78	18 %
0.4 - 1.0	4	<1 %
1.1 - 2.0	2	<1 %
2.1 - 3.0	1	<1 %
3.1 ...	0	0 %

Avg: <0.1 for 428 Samples

*Triazine screen before June 2008, then Diaminochlorotriazine (DACT).

Table 3-2

Summary

UWEX Private Well Project

Dodge County

3/13/2012

4:49 PM

Total Number Samples: 2440

Sample Dates: 11/10/1986 to 2/21/2012

Arsenic (mg/L)		
None Detected	310	85 %
... 0.010	48	13 %
0.011 - 0.050	5	1 %
0.051 - 0.100	0	0 %
0.101 - 0.150	0	0 %
0.151 ...	0	0 %
Avg: <0.004 for	363 Samples	

Calcium (mg/L)		
None Detected	12	3 %
... 25	109	23 %
26 - 50	34	7 %
51 - 75	90	19 %
76 - 100	161	34 %
101 ...	71	15 %
Avg: 69.8 for	477 Samples	

Copper (mg/L)		
None Detected	69	14 %
... 0.130	274	56 %
0.131 - 0.500	111	23 %
0.501 - 0.900	18	4 %
0.901 - 1.300	2	<1 %
1.301 ...	11	2 %
Avg: 0.147 for	485 Samples	

Iron (mg/L)		
None Detected	20	4 %
... 0.300	300	61 %
0.301 - 1.000	76	16 %
1.001 - 2.000	47	10 %
2.001 - 5.000	36	7 %
5.001 ...	9	2 %
Avg: 0.656 for	488 Samples	

Potassium (mg/L)		
None Detected	21	4 %
... 20	427	90 %
21 - 40	13	3 %
41 - 60	4	<1 %
61 - 80	5	1 %
81 ...	7	1 %
Avg: 11.9 for	477 Samples	

Magnesium (mg/L)		
None Detected	24	5 %
... 20	102	21 %
21 - 40	94	20 %
41 - 60	215	45 %
61 - 80	39	8 %
81 ...	3	<1 %
Avg: 34.7 for	477 Samples	

Manganese (mg/L)		
None Detected	106	22 %
... 0.050	319	66 %
0.051 - 0.300	52	11 %
0.301 - 0.500	3	<1 %
0.501 - 1.000	1	<1 %
1.001 ...	0	0 %
Avg: 0.024 for	481 Samples	

Sodium (mg/L)		
None Detected	0	0 %
... 25	268	56 %
26 - 50	54	11 %
51 - 75	15	3 %
76 - 100	8	2 %
101 ...	134	28 %
Avg: 64.9 for	479 Samples	

Lead (mg/L)		
None Detected	261	53 %
... 0.015	205	41 %
0.016 - 0.025	10	2 %
0.026 - 0.050	12	2 %
0.051 - 0.100	7	1 %
0.101 ...	2	<1 %
Avg: 0.005 for	497 Samples	

Sulfate (mg/L)		
None Detected	1	<1 %
...25	34	10 %
26 - 50	138	39 %
51 - 75	69	19 %
76 - 100	48	13 %
101 ...	67	19 %
Avg: 129.6 for	357 Samples	

Zinc (mg/L)		
None Detected	20	4 %
... 0.100	277	58 %
0.101 - 0.500	121	25 %
0.501 - 1.000	27	6 %
1.001 - 5.000	30	6 %
5.001 ...	5	1 %
Avg: 0.308 for	480 Samples	

CHAPTER 4

ISSUES, GOALS, OBJECTIVES

The process of updating Dodge County's Land & Water Resource Management Plan began with a series of meetings with a ten member Citizens Advisory Committee (CAC). The purpose of these meetings was to identify, prioritize, and discuss possible solutions to the most important land and water resource issues and concerns. The following is a grouped summary of the prioritized resource issues identified by the CAC:

1. Groundwater Protection
 - Protection from chemical contamination
 - Protection from bacterial contamination
 - Monitoring of groundwater quality

2. Soil Erosion / Sediment Delivery
 - Sediment delivery from cropland to surface waters
 - Soil Erosion
 - Nonpoint runoff pollution
 - More conservation practice implementation on farms
 - Shoreland/wetland protection and erosion control
 - Sediment deposition and removal from waterways

3. Farm Drainage / Wetland Management
 - Increased tiling threatening surface water quality
 - Need for vegetative buffers to keep runoff out of drainage ditches
 - High nitrates in tile water discharges

4. Nutrient Management
 - Improper spreading of liquid manure
 - Land spreading of industrial wastes
 - More enforcement needed on land spreading of manure
 - Lack of nutrient management plans for non-permitted farms
 - Effective enforcement of the state phosphorus-free lawn fertilizer law

5. Wildlife Management Control
 - Crop damage caused by Sand Hill Cranes
 - Loss of shoreline vegetation and soil from nesting Double-Crested Cormorants
 - Fecal contamination of recreational waters by resident Canada Geese

6. Conservation Education of Agricultural Producers
 - Education needed about nutrient management practices
 - Education needed about cropping and tillage practices
 - Buildup of crop residues from new corn hybrids making no-till planting a challenge

7. Conservation Education of the General Public
 - Education needed about polluted runoff from applied lawn fertilizer
 - More dialogue needed between agriculture interests and lake interests
 - General public apathy about land & water conservation issues
8. Encourage Environmentally Desirable Types of Land Use Conversion
 - Restore marginally productive cropland to their original wetland uses
 - Restore marginally productive cropland to their original woodland uses
 - Restore marginally productive cropland to their original grassland uses
9. Miscellaneous Resource Issues
 - Rules regarding erosion and runoff not strong enough
 - Global markets are driving more intensive farming practices which threaten land & water resources
 - Land being removed and/or not being re-enrolled in the Conservation Reserve Program (CRP and/or CREP)
 - Terrestrial and aquatic invasive plant species
 - Use of phosphorus lawn fertilizer causing nonpoint pollution
 - Lack of funding for technical assistance and cost sharing
 - Increased frequency of large weather events
 - Increasing number of large concentrated animal feeding operations
 - Increasing impervious areas
 - Modifications to shorelines

Having determined what are the most critical land and water resource management issues in Dodge County, the CAC met again to consider possible ways to begin resolving these issues. Seven major goals were established to address these top eight issues identified, and from one to three objectives were then established for each goal. The next section outlines these goals and objectives.

Goals and Objectives

Following is a listing of goals and objectives established to address the top eight land and water resource issues identified:

Goal 1: Protect and Improve the Quality of Dodge County's Ground Water Resources

[Objectives]

1. Protect/seal direct conduits to ground water to prevent contaminants from reaching groundwater reservoirs.
2. Promote farmer adoption and implementation of 10,000 new acres of cropland nutrient management plans per year; and 1,000 new acres of cover crops per year.
3. Pursue more restrictive regulations and more aggressive monitoring and enforcement of land spreading of commercial and industrial wastes.

Goal 2: Protect and Improve the Quality of Dodge County's Soil Resources and Surface Water Resources

[Objectives]

1. Install agricultural practices that reduce cropland soil erosion by 5,000 ton per year; that reduce sediment delivery to surface waters by 500 ton per year; and that reduce phosphorus delivery to surface waters by 5,000 pounds per year.
2. Install agricultural practices that help farmers and other rural landowners comply with the NR151 Nonpoint Runoff Rules.

Goal 3: Protect Dodge County Land & Water Resources from Adverse Impacts Caused by Cropland Drainage and Wetland Alterations

[Objectives]

1. Install agricultural practices on at least 10,000 new cropland acres annually that reduce or eliminate the percolation of bacteria, nutrients and other chemicals through cropland soils and into subsurface drain tile.
2. Install agricultural practices that annually protect at least 5 miles of drainage ditches or other surface waters from polluted cropland runoff.
3. Install wetland/wildlife habitat practices that restore prior converted wetlands.

Goal 4: Protect Dodge County Agricultural Interests from Wildlife Crop Damage

[Objectives]

1. Help at least 50 Dodge County farmers annually in obtaining full services available under the Wildlife Damage Abatement and Claims Program (WDACP).

Goal 5: Increase Farmer and Rural Landowner Awareness and Knowledge of Land and Water Resource Issues in Dodge County

[Objectives]

1. Provide a wide variety of educational opportunities to farmers and other rural landowners to increase their understanding and knowledge of the resource issues that may exist on their land, and to help them use their land to its fullest potential without degrading land and water resources.

Goal 6: Increase General Public Awareness and Knowledge of Land & Water Resource Issues in Dodge County

[Objectives]

1. Perform educational activities directed at the general public and legislators to increase their understanding and knowledge of land and water resource issues currently impacting Dodge County.

Goal 7: Encourage Environmentally Desirable Types of Land Use Conversions

[Objectives]

1. Restore marginally productive cropland to their original wetland uses.
2. Restore marginally productive cropland to their original woodland uses.
3. Restore marginally productive cropland to their original grassland uses.

CHAPTER 5

COORDINATION WITH OTHER AGENCIES AND PROGRAMS

Coordination and cooperation across agency lines, using various federal, state and local conservation programs, will be necessary to achieve the goals and objectives proposed in this plan. Inter-agency coordination and cooperation has greatly improved over the years, and efforts to further expand coordination are on-going. Due to outstanding effort on the part of the Dodge County USDA-Farm Services Agency Executive Director, a multi-agency newsletter in an electronic format has recently been activated. Participating federal, state and local conservation agencies intend to send out an electronic newsletter 5-6 times per year in a revived attempt to get information out to producers and landowners. Agency leaders meet frequently to discuss conservation program needs and to set funding priorities for programs such as the USDA-NRCS EQIP program; have pooled cost share resources to accomplish some large scale projects, have communicated back and forth to secure cost share and other financial incentives for conservation practice installation using the best conservation program options, have shared technical staff and equipment on various projects, and have jointly administered the CREP program in Dodge County since 2001.

Dodge County Land Conservation Department intends to utilize all of the following programs, as appropriate, to assist county landowners in meeting the conservation needs on their land, and in meeting the goals and objectives of our plan.

Federal Programs

1. Environmental Quality Incentives Program (EQIP) – Provides cost share assistance for the installation of locally selected best management practices that reduce erosion and manure management problems. This program is administered by the USDA-Natural Resources Conservation Service (NRCS).
2. Conservation Reserve Program (CRP) – Provides funding to landowners who take marginal cropland out of production for 10-15 years, and establish grass or woodland cover types. This program is administered by the USDA-Farm Services Agency (FSA), with technical assistance provided by USDA-NRCS.
3. Conservation Reserve Enhancement Program (CREP) – Provides funding to landowners to install conservation buffers, grass waterways, and wetland restorations on riparian cropland under 15 year agreements or perpetual easements. This program is jointly administered by USDA-FSA, Dodge County LCD, and the Wisconsin DATCP, with technical assistance provided by USDA-NRCS.
4. Wetland Reserve Program (WRP) – Provides funding for purchasing conservation easements to restore marginally wet cropland back to their original wetland uses. This program is administered by the USDA-NRCS.

5. Conservation Stewardship Program (CSP) – Provides incentive payments to landowners currently using land and water conservation practices in their farming operations, and also encourages the use of additional conservation farming practices. This program is administered by the USDA-NRCS.
6. Partners for Fish & Wildlife Program – Provides technical and financial assistance with restoring wetlands and improving fish and wildlife habitat on private lands. This program is administered by the U.S. Fish and Wildlife Service.
7. Town and Country Resource Conservation and Development (RC&D) – Provides educational, technical and financial services to individuals and units of government within the 13-county Town and Country RC&D area on various natural resource conservation and development activities.
8. Planning Assistance to States, Section 22 Program, U.S. Army Corps of Engineers – Provides planning assistance to aid in the proper utilization and conservation of water and related land resources.
9. Mississippi River Basin Initiative (MRBI) – Provides expanded conservation practice cost-share funding through USDA-NRCS under a cooperative federal, state and local nonpoint source pollution control watershed project.

State Programs

1. Soil and Water Resource Management Program (SWRM) – Provides cost share assistance and staffing grants to county land conservation departments to implement their Land and Water Resource Management Plans. This program is funded by the Wisconsin DATCP.
2. Nonpoint Runoff Rules (NR 151) – Established statewide runoff rules and performance standards that are designed to protect Wisconsin's surface and groundwater. See Chapter Six for additional information about Dodge County's NR151 implementation strategy and coordination with the DNR.
3. Targeted Resource Management Program (TRM) – Provides cost share assistance to landowners who install conservation practices to address nonpoint runoff pollution problems on targeted farms or in targeted areas. This program is funded by the Wisconsin DNR.
4. Wisconsin Farmland Preservation Program (FPP) – Provides property tax relief as an incentive to maintain farmland in agricultural use. Compliance with state soil and water conservation standards is required. Dodge County Land Conservation Department is responsible for helping program participants achieve compliance with state conservation standards, and to monitor the on-going status of program participant conservation compliance.

5. Managed Forest Law (MFL) – Provides property tax relief to landowners under long-term contracts who manage their woodlots in accordance with an approved timber management plan.
6. Wisconsin Department of Health Services (DHS) – Provides environmental health resources and assistance to address human health and safety concerns related to shoreland and wetland areas that are threatened by fecal or other contaminants caused by human or wildlife activities.

County and Local Programs

1. Dodge County Manure Storage and Nutrient Utilization Ordinance – Regulates the location, design, construction and operation of manure storage facilities, as well as the proper application of manure stored in permitted facilities. Administered by the Dodge County Land Conservation Department, and can be viewed on-line at [www.co.dodge.wi.us], or a copy obtained for review purposes by contacting the Dodge County Land Conservation Department.
2. Construction Site Erosion Control and Stormwater Management – Requires the submission and county review of construction site erosion control and stormwater management plans for residential and commercial development projects disturbing 2,000 square feet or more of land, and/or adding 20,000 square feet or more impervious surface. Administered by Dodge County Land Resources and Parks Department, with plan review services provided by Dodge County Land Conservation Department. This ordinance can be viewed by contacting the Dodge County Land Resources and Parks Department, or by visiting the Land Resources and Parks Department website at [www.co.dodge.wi.us].
3. Dodge/Columbia County Graziers Network – Provides education services to Dodge and Columbia County farmers interested in converting part or all of their farm operation to a prescribed grazing system. Activities are jointly planned and carried out by staff from the Dodge County and Columbia County Land Conservation Departments, with assistance from the University of Wisconsin-Extension Service and the USDA-NRCS.
4. Small Packet Tree Sales Program – Provides for the sale and distribution of small packets of trees (bundle of 25 trees). Administered by the Dodge County Land Conservation Department.
5. Reforestation Program – Provides tree planting machines and planting bars to those planting large quantities of trees for reforestation purposes. Administered jointly by the Dodge County Land Conservation Department and the Wisconsin DNR Forester assigned to Dodge County.
6. Dodge County Human Services – Public Health – Provides assistance in water quality monitoring of surface water and ground water, and in providing environmental health programs to Dodge County residents.

7. Dodge County Land Resources and Parks Department – Provides for the administration and enforcement of state and county shoreland and wetland protection regulations.
8. Municipalities, lake districts and sanitary districts – Undertake various responsibilities and initiatives that address land and water resource issues that are impacting their specific areas of jurisdiction.

Private Conservation Organizations

1. Pheasants Forever – Provide technical and financial assistance with establishment and improvement of upland wildlife habitat for pheasants and other wildlife.
2. Wings Over Wisconsin – Provide technical and financial assistance with wetland restorations and nesting cover establishment.
3. Ducks Unlimited – Provide technical and financial assistance with wetland restorations and establishment of nesting cover.
4. Rock River Coalition – Provides educational, financial and administrative support to individuals, local, state and federal units of government in the protection of land and water resources within the Rock River Basin. The Rock River Coalition also coordinates a citizen water quality monitoring program within the Rock River Basin.
5. Lake Associations – Perform lake planning and water quality monitoring activities on Dodge County lakes, and provide support for land and water conservation activities of local, county, state, and federal government agencies.
6. Land Trusts and Land Conservancies – Facilitate the purchase of various conservation easements to protect environmentally sensitive and/or geographically unique lands from undesirable land use conversions.

CHAPTER 6

NR 151 NONPOINT RUNOFF RULES IMPLEMENTATION

NR 151 Nonpoint Runoff Rules

On October 1, 2002 Administrative Rule NR 151 went into effect, establishing minimum statewide nonpoint runoff prohibitions and performance standards designed to protect Wisconsin's surface and groundwater resources. Revisions that inserted additional performance standards into NR 151 went into effect on January 1, 2011. Landowners continue to be encouraged to voluntarily implement conservation practices that comply with Wisconsin's nonpoint runoff rules. However, it is now possible to compel landowners to comply if voluntary efforts are not completely successful. One critical element needed to compel landowners to comply with the prohibitions and performance standards is the provision of 70% cost sharing. A summary of the NR 151 Prohibitions and Performance Standards follows:

NR 151.02 Sheet, Rill and Wind Erosion

1. All land where crops or feed are grown shall be cropped to achieve a soil erosion rate equal to, or less than, the "tolerable" (T) rate established for that soil.
2. This section applies to livestock pastures and winter grazing areas after July 1, 2012.

NR 151.03 Tillage Setback

1. No tillage operation shall impact stream integrity or deposit soil directly in surface waters.
2. No tillage may be conducted within five (5) feet of the top of the channel of surface waters. Tillage setbacks greater than five (5) feet but no more than 20 feet may be required to meet this standard.
3. Producers shall maintain the five (5) foot tillage setback in sod or vegetative cover.

NR 151.04 Phosphorus Index Performance Standards

1. Croplands, pastures and winter grazing areas shall average a Phosphorus Index of six (6) or less over the accounting period and may not exceed an index of 12 in any individual year. The Phosphorus Index shall be calculated using the version of the Wisconsin Phosphorus Index available as of January 1, 2011.

NR 151.05 Manure Storage Facilities Performance Standards

1. All new or substantially altered manure storage facilities built after October 1, 2002 shall comply with this section.
2. All new or substantially altered manure storage facilities shall be designed, constructed and maintained to minimize failure.
3. All facilities built or altered after January 2, 2011 shall contain the additional runoff volume of a 25-year, 24-hour storm.
4. A manure storage structure where usage has ceased for 24 months shall be abandoned. Facilities where future use is anticipated may be retained under specific conditions.

5. Facilities in existence as of October 1, 2002 that pose an imminent threat to public health, aquatic life or groundwater shall be upgraded, replaced or abandoned in accordance with this section.
6. Manure storage levels in new or existing (based on the definitions of new and existing) may not exceed the margin of safety.

NR 151.055 Process Wastewater

1. All livestock producers shall comply with this section.
2. There may be no significant discharge of process wastewater, defined by NR 243.03(53) to waters of the state.

NR 151.06 Clean Water Diversion

1. All livestock producers shall comply with this section.
2. Runoff shall be diverted from contacting feedlots, manure storage and barnyard areas within the Water Quality Management Area (WQMA).
3. Private wells only need protection when located downstream of feedlots and barnyards.

NR 151.07 Nutrient Management

1. All crop producers and livestock producers that apply manure or other nutrients directly or through contract to agriculture fields shall comply with this section.
2. Manure, commercial fertilizer, and other nutrients shall be applied in conformance with an approved USDA-NRCS 590 nutrient management plan.

NR 151.08 Manure Management Prohibitions

1. All livestock producers shall comply with this section.
2. All livestock operations shall have no overflow of manure storage facilities.
3. A livestock operation shall have no unconfined manure pile in a water quality management area.
4. A livestock operation shall have no direct runoff from a feedlot or stored manure into the waters of the state.
5. A livestock operation may not allow unlimited access by livestock to the waters of the state where high concentrations of animals prevent the maintenance of adequate sod cover.

Local Implementation Strategy

The Dodge County Land Conservation Committee intends to work cooperatively with local Wisconsin DNR and other agency staff to implement the NR 151 runoff rules in Dodge County. Following is a description of the activities that the Dodge County Land Conservation Department proposes to undertake in this joint effort with the state. Actual work activity type and work accomplishments will be highly dependent on the availability of adequate financial and human resources for conservation practice installation and for local technical staff.

Information and Education

The Dodge County Land Conservation Department, working with the Dodge County University of Wisconsin Cooperative Extension Service, will carry out the bulk of the local information and

education activities pertaining to the NR 151 nonpoint runoff rules. To be most effective, it is felt that emphasis should continue to be placed on using one-on-one landowner contacts. To increase general knowledge and awareness, general circulation press releases will be provided to local newspapers and radio stations, and farm specific articles will be published in the multi-agency e-newsletter to producers and rural landowners. Education and training on specific conservation practices will be provided through research plots, field days, and workshops.

Priority Farm Identification

Because there are approximately 2,000 farms in Dodge County, it will take many years to contact, prepare plans, design and install all the conservation practices that will be needed to achieve full compliance with the NR 151 nonpoint runoff rules. Therefore, a strategy to identify, contact and work with priority farms is necessary.

Since Dodge County is mandated to administer the Wisconsin Farmland Preservation Program, including soil and water conservation compliance requirements, and because over 650 Dodge County farm owners participate in the Farmland Preservation Program, high priority will be given to contacting and working with these program participants.

Dodge County proposes to use the following prioritization process to contact landowners and implement practices needed to comply with the NR 151 nonpoint runoff rules:

- | | |
|------------------|---|
| First Priority: | Farms where a valid complaint has been received, and a NR 151 violation has been investigated and confirmed, for one or more of the nonpoint prohibitions or performance standards. |
| Second Priority: | Farms applying for new Farmland Preservation Program long-term agreements; or farms enrolling for the first time into the Farmland Preservation Program under farmland preservation zoning. |
| Third Priority: | Existing farmland preservation zoning participants enrolling new land into the Farmland Preservation Program. |
| Fourth Priority: | Farms located in priority watershed areas (i.e. impaired waters including but not limited to the East Branch Rock River, Upper Rock River, and Beaver Dam River Watersheds) where special project funding has been secured, allowing for legitimate cost-share offers to be made to landowners that would be found to be violating one or more of the nonpoint prohibitions or performance standards. |
| Fifth Priority: | All other farms not included above, as time and resources permit. |

We would anticipate annually working with 2-3 farms under “First Priority”; 20-25 farms under “Second Priority”; 20-25 farms under “Third Priority”; and possibly 30-50 farms under “Fourth Priority”.

It should be noted that over 650 existing Farmland Preservation Program participants were contacted and evaluated for compliance with state conservation standards between April 2010 and December 2011. Over 350 of these program participants were found to be out of compliance with one or more of the conservation standards, and have been put on a schedule to achieve compliance by no later than December 2015. Aside from the priority farm identification process, this also presents a formidable implementation workload for Land Conservation Department staff to address over the next 3-4 years.

One-on-One Farm Contacts

(Complaints)

Dodge County Land Conservation Department staff have historically accompanied and assisted DNR staff on investigations of complaints regarding NR 243 and NR 151 violations. The Dodge County Land Conservation Committee intends to continue providing that assistance by Land Conservation Department staff. The determination as to whether a site is compliant with state runoff rules will be made by the DNR, without input provided by LCD staff. It will be the DNR's responsibility to generate and issue the various compliance letters associated with these farm contacts. Given adequate financial and human resources, it will continue to be the county's responsibility to provide technical planning, design and construction inspection services to correct non-compliant sites. The county, with the assistance of DNR staff, will also attempt to secure financial resources needed to make an official offer of cost sharing in order to correct non-compliant sites.

(Newly Enrolled Farmland Preservation Program Lands)

Dodge County Land Conservation Department staff will continue to evaluate land that is proposed for new enrollment in the Farmland Preservation Program, either under long-term agreements or under farmland preservation zoning, for compliance with NR 151 nonpoint runoff rules. Owners of land proposed for enrollment under a long-term agreement will be contacted to make them aware of the conservation compliance requirements of the program, and to offer the services of Land Conservation Department staff to assist them in achieving full compliance with the conservation standards prior to signing the long-term agreement. If landowners do request assistance, Land Conservation Department staff will evaluate their compliance status, and help them become compliant in any areas where they are determined to be not yet compliant. Owners of land proposed for enrollment under zoning will be assisted on a first-come, first-served basis. Dodge County Land Conservation Department staff will monitor landowner compliance with the NR 151 runoff rules under the program.

(Priority/Impaired Waters Watersheds)

As special project funding becomes available, and/or as staff resources allow, Dodge County Land Conservation Department staff will systematically contact and evaluate other farms located in priority / impaired waters watersheds. The intent would be to work with farmers located in either the East Branch Rock River, Upper Rock River, or Beaver Dam River Watersheds first. Dodge County Land Conservation Department staff will make the initial determination on compliance status for these farms, but will seek DNR confirmation if needed.

Documentation of NR 151 Evaluations and Landowner Notifications

(Complaints)

It is intended that Wisconsin DNR staff will be responsible for documentation and recording of compliance determinations on all NR 151 runoff rule complaints investigated. DNR staff will also be responsible for generating and issuing the various landowner notification letters of compliance or non-compliance. Dodge County Land Conservation Department staff will record and track landowner/parcel compliance after it has been determined that specific land parcels have been found to be in compliance, or have been brought into compliance, with NR 151 runoff rules.

(Farmland Preservation Program Evaluations and Landowner Evaluations)

Dodge County Land Conservation Department staff will be responsible for documentation and recording of compliance determinations related to participants in the Farmland Preservation Program. A single sheet form has been developed and used to serve as the method of documenting evaluation findings, as well as serving as the means of notifying a program participant of the status of their compliance with NR 151 runoff rules. A “continuing compliance” cover letter will continue to be used when mailing out the landowner copy of the conservation plan to further notify/remind participants of their need to maintain compliance with NR 151 runoff rules.

(Priority/Impaired Waters Watersheds)

Dodge County Land Conservation Department staff will use a modified version of the Farmland Preservation Program evaluation and notification form as we would begin contacting and evaluating other county farms located in priority/impaired waters watersheds. Dodge County Land Conservation Department staff will be responsible for documentation, recording, notifying, and tracking of landowner/parcel compliance after it has been determined that specific land parcels have been found to be in compliance, or have been brought into compliance, with NR 151 runoff rules.

Enforcement Actions

If a Farmland Preservation Program participant fails to comply with NR 151 runoff rules as directed and within the allotted time frame, the Dodge County Land Conservation Department will initiate action to issue a Notice of Noncompliance for the Farmland Preservation Program. Dodge County Land Conservation Department staff will work with local DNR staff in undertaking enforcement action associated with NR 151.09 for any landowners who need to correct one or more NR 151 non-compliance issues on their land but who also refuse to do so voluntarily.

Appeals

Landowners wishing to appeal a non-compliance determination or decision by the Dodge County Land Conservation Department may file a written appeal of the determination or decision with the Dodge County Land Conservation Department. A hearing on the appeal shall be held within 60 days of the date of the written appeal. Landowners wishing to appeal a non-compliance determination or decision made by the Wisconsin DNR will be directed to contact the DNR to file their appeal.

Other Local Regulations

Dodge County currently administers local regulations that address several of the Nonpoint Runoff Rules specified within NR 151. As discussed previously, the Dodge County Land Use Code, which is administered primarily by the Dodge County Land Resources and Parks Department, requires the preparation, submittal, review and approval of construction site erosion control and stormwater management plans on commercial and residential development projects in Dodge County. Staff of the Dodge County Land Conservation Department assists in reviewing and reporting on the adequacy of submitted plans.

The Dodge County Land Conservation Department has been administering the Dodge County Manure Storage and Nutrient Utilization Ordinance since 1997. This ordinance was amended in May 2007 to include requirements calling for the preparation and annual updating of a nutrient management plan for manure stored in all storage facilities permitted under the amended ordinance, and also requiring the proper closure of idled/unused manure storage facilities.

Other Actions to be Pursued

The Dodge County Land Conservation Department will, in cooperation with local DNR staff, pursue the preparation and adoption of a memorandum of understanding to establish roles and responsibilities of each agency regarding implementation and enforcement of the nonpoint runoff rules contained within DNR Administrative Rule NR 151.

CHAPTER 7

INFORMATION AND EDUCATION STRATEGY

Working with staff of the Dodge County UWEX, USDA-NRCS, USDA-FSA and others, the Dodge County Land Conservation Department will carry out various information and education activities designed to achieve the goals and objectives established in this Land & Water Resource Management Plan. It is intended that these information and education activities will raise awareness of land and water resource issues among rural landowners and land operators, among local and state legislators, and among the general public. The assumption is that a well-informed citizenry can and will make better land use and better public policy decisions with regard to land and water resource management.

Specific work activities proposed to raise awareness and to help achieve plan goals and objectives include, but are not limited to the following:

- Emphasize one-on-one landowner contacts
- Annually prepare and distribute 20-25 general circulation news releases
- Annually prepare and distribute news articles in 5-6 issues of a multi-agency electronic newsletter
- Work cooperatively with other partner conservation agencies to organize several half-day field days on county farms to hi-lite the environmental and economic benefits of various conservation practices
- Work cooperatively with other partner conservation agencies to organize a tour for Dodge County farmers to view conservation success stories
- Work cooperatively with other partner conservation agencies to sponsor annual workshops for farmer manure and nutrient management planner training, for farmer nutrient management planner recertification, and for intensive rotational grazing
- Advertise conservation programs available to county farmers and rural landowners
- If requested, help lake districts organize and conduct educational forums between farmers and lake property owners
- Pursue speaking engagements at farmer and rural landowner meetings, at schools, at civic functions, and on local radio programs where land and water conservation information can be presented

CHAPTER 8

EVALUATION AND MONITORING

Various techniques will be used to track and evaluate our progress in achieving the goals and objectives in this plan. The following narrative describes some of the activities that will be carried out by the Land Conservation Department staff and others to document our progress in implementing Dodge County's Land & Water Resource Management Plan.

Evaluating Progress in Protecting and Improving Groundwater Quality

All known water quality protection and improvement practices, such as well abandonments, manure storage facility closures, cropland acres protected by nutrient management plans, residue management practices, cover crops, riparian buffers, wetland restorations, etc. will be tracked quarterly, summarized annually, and will be included in annual reports to the county board and other interested agencies and individuals. When available through additional testing conducted by the Wisconsin DNR, Dodge County UWEX, Dodge County Lake Districts, or other agencies and organizations, the results of rural well water testing will be obtained and evaluated to determine if groundwater contamination levels are improving or becoming worse. This information will not only help us measure the level of success with plan implementation, but will also help us to focus and prioritize future work efforts.

Evaluating Progress in Protecting and Improving the Quality of Soil Resources and Surface Water Resources

All known soil erosion control and soil quality improvement practices such as residue management, cover crops, managed intensive grazing, grassed waterways, critical area stabilization, etc. will be tracked quarterly, summarized annually, and will be included in annual reports to the county board and other interested agencies or individuals. Dodge County Land Conservation Department staff intend to continue conducting the annual county-wide soil erosion transect survey to determine changes, for the better or for the worse, in usage of residue management practices and in county-wide erosion rates. Surface water quality monitoring conducted by the Wisconsin DNR, Dodge County Lake Districts and Lake Associations, or citizen monitoring efforts will also be obtained and evaluated to determine if surface water contamination levels are improving or becoming worse. As the Wisconsin DNR updates basin plans and reports, water quality monitoring data and the reported conditions of various surface water bodies will be evaluated to determine changes for the better, or for the worse. The results of Wisconsin DNR Electrofishing and Fyke Netting surveys will also be reviewed and used to measure changes in the quality of our surface waters. Again, this information will help us measure the level of success with plan implementation, but will also help us to focus and prioritize future work efforts.

Evaluating Progress in Protecting Land & Water Resources from Adverse Impacts Caused by Cropland Drainage and Wetland Alterations

All known water quality protection practices, such as residue management, nutrient management, cover crops, riparian buffer/filter strips, tillage set-back, and wetland

restorations, etc. will be tracked quarterly, summarized annually, and will be included in annual reports to the county board and other interested agencies and individuals. Surface water quality monitoring conducted by the Wisconsin DNR, Dodge County Lake Districts and Lake Associations, or citizen monitoring efforts will also be obtained and evaluated to determine if installed practices are having a positive impact on surface water quality.

Evaluating Progress in Protecting Dodge County Agricultural Interests from Wildlife Crop Damage

If more landowners choose to participate in the Wisconsin Wildlife Damage Abatement and Claims Program (WDACP), more Dodge County cropland will be better protected from damage by wildlife species such as deer, geese and turkeys. If Wisconsin were to include sand hill cranes as a program eligible species, additional reductions in crop damages could be realized. The total number of program participants will be tracked annually, and the number of wildlife damage claims along with total assessed damages caused by wildlife on county crops will be evaluated annually and compared to historical levels of wildlife crop damage in the county to help determine if wildlife crop damage to county crops is being reduced.

Evaluating Progress in Improving Landowner Awareness and Knowledge of Land and Water Resource Issues in Dodge County

If landowners and farmers become more aware and concerned about land and water resource issues in Dodge County, we should be able measure this by increased activity in the implementation of conservation practices. Therefore, total practices implemented annually will be tracked on a quarterly, summarized on an annual basis, and included in progress reports to the county board and others. Increased usage of residue management practices around the county could be considered an indicator that farmers are more aware of the need for and benefits of planting with less tillage or no tillage. Increased usage of nutrient management practices around the county could be considered an indicator that farmers are more aware of the need for and benefits of preparing and following a cropland nutrient management plan. Increased installation of diversions, grass waterways, and critical area stabilization practices could be considered an indicator that farmers are more aware of the need for and benefits of controlling concentrated rainfall and snowmelt runoff. Findings from our annual soil erosion transect survey will also be used to determine if there is an overall increase of conservation farming practices.

Evaluating Progress in Improving General Public Awareness and Knowledge of Land and Water Resource Issues in Dodge County

If outdoors recreationalists, private rural landowners, and other members of the general public, become more aware and concerned about land and water resource issues in Dodge County, we can expect to see growing numbers of citizen enquiries and complaints regarding land use practices of farmers and other rural landowners. It is also anticipated that increased awareness and knowledge of land and water resource issues will cause more citizens to put some pressure on others to change inappropriate land use practices that can damage county land and water resources.

Evaluating Progress in Encouraging Environmentally Desirable Types of Land Use Conversions

With the cooperation of other state and federal agencies and organizations, all known acres of marginal cropland or unproductive cropland restored to wetland, woodland and grassland uses will be tracked and included in reports to the county board and to other interested agencies and individuals. With the cooperation of the DNR Forester for Dodge County, the acres of trees planted, new forest management plans, and new tree planting plan acres will also be tracked and reported annually. With the cooperation of the staff from the USDA-NRCS, USDA-FSA, DNR Glacial Habitat Restoration Area Project, and the U.S. Fish and Wildlife Service, the acreage of land converted to riparian buffers, grass filter strips, grassland, and wetlands will be tracked and reported annually. The acres of woodland, prime farmland, unique geographical or environmentally sensitive lands protected from land use conversion by the efforts of various county based land trusts will also be tracked.

2013 – 2022 DODGE COUNTY WORK PLAN

GOAL 1: PROTECT AND IMPROVE THE QUALITY OF DODGE COUNTY'S GROUND WATER RESOURCES

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes	I. & E. Tools
Protect/seal direct conduits to groundwater to prevent contaminants from reaching groundwater reservoirs	Promote the proper closure of idled/unused rural wells; providing both technical and cost-share assistance	LCD	Annually	120 Hours (\$4,800)	15-20 wells closed	All-Agency Newsletter Newspaper Releases Farmland Pres. Contacts Other one-on-one Contacts
	Promote the proper closure of idled/unused manure storage facilities	LCD NRCS	Annually	200 Hours (\$8,000)	2-3 storage facilities closed	All-Agency Newsletter Newspaper Releases Farmland Pres. Contacts Other one-on-one Contacts
	Promote the sealing or installation of protective practices around sinkholes and other karst features	LCD	Annually	50 Hours (\$2,000)	1 Project	All Agency Newsletter Other one-on-one Contacts
Promote farmer adoption and annual implementation of new acres of cropland nutrient management plans; and new acres of cover crops.	Seek and utilize cost-share funding from various public and private sources to use as an incentive to implement nutrient management plans and cover crops on Dodge County cropland	LCD NRCS	Annually	1,200 Hours (\$48,000)	10,000 new acres of nutrient management plans; and 1,000 new acres of cover crops	N/A
	Monitor and enforce the nutrient management plan requirements of the Dodge County Manure Storage Ordinance	LCD	Annually	100 Hours (\$4,000)	All permittees maintain compliance with nutrient management requirements	Landowner Mailings
				65		

GOAL 1 – (Continued)

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
Promote proper manure storage and management practices on county farms	Administer and enforce the Dodge County Manure Storage and Nutrient Utilization Ordinance	LCD	Annually	1,500 Hours (\$60,000)	All county farms comply with ordinance requirements	One-on-One Contacts All-Agency Newsletter
Pursue more restrictive regulations and more aggressive monitoring and enforcement of land spreading of commercial and industrial wastes.	Educate state legislators about the problem with ineffective state laws for land applied industrial wastes.	LCC/ LCD	2013- 2014	100 Hours (\$4,000)	State Laws on land spread industrial wastes become more restrictive	Mailings to Legislators

2013 – 2022 DODGE COUNTY WORK PLAN

GOAL 2: PROTECT AND IMPROVE THE QUALITY OF DODGE COUNTY'S SOIL RESOURCES AND SURFACE WATER RESOURCES

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
Install agricultural practices that reduce soil erosion by 5,000 ton/year, sediment delivery by 500 ton/year, phosphorus delivery by 5,000 pounds/year; and that help farmers comply with NR 151 Nonpoint Run-off Rules.	Seek to implement new acres of residue management, cover crops, riparian buffers, and nutrient management plans.	LCD NRCS FSA DNR	Annually	Included in Other Actions Under Goal #2	5,000 new acres residue management practices 100 new acres riparian buffers 1,000 new acres cover crops 10,000 new acres nutrient management plans	All-Agency Newsletter Newspaper Releases Field Days / Tours One-on-one Contacts
	Implement Farmland Preservation Program conservation standards on all participating Dodge County farms.	LCD	2013-2015	1,400 Hours (\$56,000)	650 -700 farms in full compliance	Landowner Mailings All-Agency Newsletter Status Reviews Compliance Certification
	Monitor conservation compliance of all Farmland Preservation Program participants; provide technical assistance where needed and as resources allow.	LCD	Annually	1,400 Hours (\$56,000)	650-700 farms in full compliance	Landowner Mailings All-Agency Newsletter Status Reviews Compliance Certification
	Conduct multiple farmer nutrient management planner training workshops.	LCD UWEX Consultant	Annually	400 Hours (\$16,000)	20-30 new farmers trained 50-75 farmers re-certified	All-Agency Newsletter Newspaper Releases Brochures
				67		

GOAL 2 – (Continued)

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
	Install structural soil erosion and nonpoint source pollution control practices under the Dodge County Land & Water Resource Management Plan	LCD	Annually	1,400 Hours (\$56,000)	Practices installed that contribute to Goal #2 objectives	All-Agency Newsletter Newspaper Releases Field Days / Tours One-on-One Contacts
	Enforce nutrient management requirements of Dodge County Manure Storage Ordinance.	LCD	Annually	(See Goal #1 - Objective #2)	50-75 farmers monitored	Landowner Mailings All-Agency Newsletter One-on-One Contacts
	Assist the local USDA-NRCS Field Office with installation of conservation practices that control soil erosion, sediment delivery, and phosphorus delivery to surface waters.	LCD NRCS	Annually	40 Hours (\$1,600)	All Eligible Practices Installed	All-Agency Newsletter Newspaper Releases Field Days/Tours One-on-One Contacts
	Advertise/encourage the use of cost share and other incentive funds available from DATCP, DNR, NRCS, and EPA funded programs to install conservation practices that meet the objectives stated for this goal.	LCD NRCS DNR	Annually	40 Hours (\$1,600)	All Available Funds Used	All-Agency Newsletter Newspaper Releases One-on-One Contacts
	Provide technical and cost-share assistance to farmers that have been issued a Notice of Discharge by the Wisconsin DNR under the NR151 Nonpoint Runoff Rules.	LCD	Annually	300 Hours (\$12,000)	1-2 Farms Assisted	One-on-One Contacts
				68		

GOAL 2 – (Continued)

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
	Consider applying for a DNR funded large-scale watershed project under the Targeted Runoff Management Program to install conservation practices that meet the objectives stated for this goal.	LCD	2013-2015	None Projected at This Time	10-15 Farms Assisted	Landowner Mailings All-Agency Newsletter Newspaper Releases One-on-One Contacts
	Meet with DNR and interested private sector and public sector partners to consider and plan a pilot nutrient trading project for a priority watershed in Dodge County.	DNR Project Partners LCD	2013	200 Hours (\$8,000)	Partners agree on how to verify pollutant reductions and establish a pilot nutrient trading project.	Face-to-Face Meetings

2013 – 2022 DODGE COUNTY WORK PLAN

GOAL 3: PROTECT DODGE COUNTY LAND AND WATER RESOURCES FROM ADVERSE IMPACTS CAUSED BY CROPLAND DRAINAGE AND WETLAND ALTERATIONS

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
Install agricultural practices that reduce or eliminate the percolation of bacteria, nutrients, and other chemicals through cropland soils and into surface drain tile. Install agricultural practices that protect drainage ditches or other surface waters from polluted cropland runoff.	Seek to implement new acres of residue management, cover crops, and nutrient management plans on cropland.	LCD NRCS FSA DNR	Annually	(See Goal #1-Objective #2; and Goal #2 – Objective #1)	10,000 cropland acres adequately treated	All-Agency Newsletter Field Days/Tours Farmland Pres. Contacts Other Contacts
	Seek to implement more grass buffer/filter strips using state and federal incentive funding.	LCD NRCS FSA	Annually	250 Hours (\$10,000)	5 miles of ditches/ streams protected	All-Agency Newsletter Field Days/Tours One-on-One Contacts
	Seek to implement tillage setback limits from ditches and other surface waters as prescribed under NR 151.03 and under ATCP 48.24.	LCD Drainage Board	Annually	250 Hours (\$10,000)	5 miles of ditches/ streams protected	All-Agency Newsletter Newspaper Releases Farmland Pres. Contacts One-on-One Contacts
Install conservation practices that protect surface waters and restore prior converted wetlands	Seek to implement drainage management practices where applicable in existing and new tile drainage systems.	LCD NRCS Lake Districts	Annually	50 Hours (\$2,000)	One Project	One-on-One Contacts
	Promote wetland restorations on cropland that is either farmed wetland or prior converted wetland; encourage landowners to participate in wetland programs of the USDA-NRCS, DNR, Fish & Wildlife.	NRCS DNR FWS	Annually	250 Hours (\$10,000)	100 acres restored	All-Agency Newsletter Newspaper Releases One-on-One Contacts
				70		

GOAL 3 – (Continued)

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
	Encourage Dodge County Drainage Board to require all petitions for new drainage districts to incorporate NR151 Runoff Rules	LCD Drainage Board	2013-2015	40 hours	5 miles of ditches/streams	Meetings between the LCD/LCC and the Dodge County Drainage Board

2013 – 2022 DODGE COUNTY WORK PLAN

GOAL 4: PROTECT DODGE COUNTY'S AGRICULTURAL INTERESTS FROM WILDLIFE CROP DAMAGE

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
Help Dodge County farmers obtain the full services and benefits that are available to them under the Wildlife Damage Abatement and Claims Program(WDACP).	Inform/educate Dodge County farmers about the technical and financial services available to them under the WDACP.	LCD USDA-APHIS	Annually	50 Hours (\$2,000)	50 Plus Farmers Assisted	All-Agency Newsletter Newspaper Releases On-on-One Contacts
	Educate state legislators as to the problem of crop damage due to Sand Hill Cranes, and the need for an adequate funding mechanism to cover the Increased costs to the WDACP.	LCD	2013	100 Hours (\$4,000)	Crop Damage from Sand Hill Cranes Eligible under WDACP	Mailings to Legislators

2013 – 2022 DODGE COUNTY WORK PLAN

GOAL 5: INCREASE FARMER AND RURAL LANDOWNER AWARENESS AND KNOWLEDGE OF LAND AND WATER RESOURCE ISSUES IN DODGE COUNTY

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
Provide a variety of educational opportunities to rural landowners and farmers to increase their knowledge and understanding of resource issues that may exist on their land, and to help them use their land to its fullest potential without degrading land and water resources.	Emphasize one-on-one contacts as the way to most effectively help landowners make changes in their land use practices.	LCD NRCS FSA UWEX	Annually	200 Hours (\$8,000)	Additional 10 Conservation Practices Installed Each Year	One-on-One Contacts
	Prepare and distribute press releases to local newspapers and radio stations.	LCD	Annually	50 Hours (\$2,000)	20-25 Press Releases Prepared and Distributed	Press Releases
	Prepare and distribute news articles through an All-Agency Electronic Newsletter.	FSA LCD NRCS	Annually	50 Hours (\$2,000)	News Articles in 12 Monthly Newsletters	All-Agency Newsletter
	Work cooperatively with other partner conservation agencies to organize several half-day field days on county farms to hi-lite the environmental and economical benefits of various conservation practices.	NRCS LCD FSA UWEX	Annually	100 Hours (\$4,000)	4-6 Half-Day Field Days	All-Agency Newsletter Press Releases One-on-One Contacts
	Work cooperatively with other partner conservation agencies to organize a tour for Dodge County farmers of several conservation "success stories".	NRCS FSA LCD UWEX	Annually	50 Hours (\$2,000)	One Tour	All-Agency Newsletter Press Releases One-on-One Contacts

GOAL 5 – (continued)

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
	Work cooperatively with other partner conservation agencies to sponsor several nutrient management planner training sessions for Dodge County farmers.	LCD UWEX Consultant	Annually	(See Goal #2 - Objective #1)	First-Time Planner's Session Planner Re-Certification Several SNAP-Plus Sessions	All-Agency Newsletter Press Releases One-on-One Contacts
	Pursue speaking engagements at farmer and rural landowner meetings where land and water conservation information can be presented.	LCD	Annually	25 Hours (\$1,000)	2-3 Speaking Engagements	One-on-One Contacts
	Work cooperatively with Columbia County Land Conservation Department in organizing summer grazing pasture walks and a winter grazing workshop to hi-lite the environmental and economical benefits of converting from a conventional farming system to a managed grazing system.	LCD	Annually	50 Hours (\$2,000)	2-3 Pasture Walks One Winter Workshop	Press Releases All-Agency Newsletter One-on-One Contacts
	Advertise conservation programs available to county farmers and rural landowners.	LCD	Annually	(Included in Other Goal #5 Actions)	Better Informed/More Involved Landowners	Press Releases All-Agency Newsletter Department Web-Site
	Help lake districts organize and conduct educational forums between farmers and lake property owners.	Lake Districts LCD UWEX	On As Needed Basis	25 Hours (\$1,000)	Lake Property Owners and Watershed Farmers have a Better Understanding of each Others Issues and Needs	Landowner Mailings Press Releases All-Agency Newsletter
				74		

2013 – 2022 DODGE COUNTY WORK PLAN

GOAL 6: INCREASE GENERAL PUBLIC AWARENESS AND KNOWLEDGE OF LAND AND WATER RESOURCE ISSUES IN DODGE COUNTY

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
Perform educational activities directed at the general public and legislators to increase their understanding of land and water resource issues that are currently impacting Dodge County.	Prepare and distribute press releases to local newspapers and radio stations.	LCD	Annually	(Included in Goal #5 Actions)	Better Informed and Involved County Citizens	Press Releases Department Web-Site
	Pursue speaking engagements at schools, at civic functions, and on local radio programs where land and water conservation information can be presented.	LCD NRCS	On As Needed Basis	25 Hours (\$1,000)	2-3 Speaking Engagements	One-on-One Contacts
	Prepare and present current information pertaining to Dodge County land and water resource issues to local, state, and federal legislators to secure their support and assistance.	LCD/ LCC	On As Needed Basis	25 Hours (\$1,000)	Better Informed Legislators/ Better Support for Land and Water Conservation Work	One-on-One Contacts County Board Reports Mailings to Legislators Meetings w/ Legislators

2013 – 2022 DODGE COUNTY WORK PLAN

GOAL 7: ENCOURAGE ENVIRONMENTALLY DESIRABLE TYPES OF LAND USE CONVERSIONS

Objectives: (Priority Items In Bold)	Actions: (Priority Items In Bold)	Who: (Lead Agency First)	When:	Staff & Other Costs: (LCD Costs Only)	Anticipated Annual Outcomes:	I. & E. Tools
Restore marginally productive cropland to their original wetland uses.	Promote wetland restoration of marginally productive farmed wetlands or prior drained croplands, directing landowners to programs such as WRP, CRP, CREP, GHRA, Partners for Fish and Wildlife, Wings Over Wisconsin, and Ducks Unlimited.	LCD NRCS FSA DNR FWS	Annually	25 Hours (\$1,000)	200 marginal cropland acres converted to wetland uses	All-Agency Newsletter Press Releases One-on-One Contacts
Restore marginally productive cropland to their original woodland uses.	Promote the re-establishment of woodlands on marginally productive cropland, directing landowners to programs such as the Wisconsin Managed Forest Law (MFL), CRP, and Dodge County's Small Pack Tree Sales Program.	LCD DNR NRCS FSA	Annually	120 Hours (\$4,800)	200 marginal cropland acres converted to woodland uses	All-Agency Newsletter Press Releases One-on-One Contacts
Restore marginally productive cropland to their original grassland uses.	Promote the re-establishment of grasslands on marginally productive cropland, directing landowners to programs such as GHRA, Partners for Fish and Wildlife, USDA's Wildlife Habitat Incentives Program, CRP, and Pheasants Forever.	LCD DNR NRCS FWS	Annually	25 Hours (\$1,000)	200 marginal cropland acres converted to grassland uses	All-Agency Newsletter Press Releases One-on-One Contacts
				76		

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U.S. Forest Service Inventory and Analysis, 2010. U.S. Forest Service

Appendix A

2012 Dodge County Land & Water Resources Management Plan Revision Issues / Concerns Identified at the Technical Agency Advisors Meeting January 19, 2012

Issue #1: High commodity crop prices and high land rental rates are negatively impacting Dodge County's land and water resources in the following ways:

- More cropland acres are being planted to erosive cash grain crops such as corn and soybeans
- Land once enrolled in the Conservation Reserve Program (CRP) is either not being re-enrolled when the contract expires, or is being removed from CRP prior to contract termination. Records show that Dodge County has lost 42% of its CRP acreage from 2007 to 2012 (nearly 5,600 acres)
- Less landowners are willing to enroll land into wildlife habitat programs that seek to restore marginal cropland to either wetland or grassland cover types

Issue #2: Increased activity with drainage ditch cleanout and/or tile drainage provides for the potential of increased nonpoint source water pollution and flooding issues downstream. Also, there has been an increase in such activities being undertaken without proper review and issuance of necessary permits by federal, state and county land use agencies.

Issue #3: Urban expansion / development resulting in decreased wildlife habitat, loss of farmland acreage, and increased potential for nonpoint pollution and flooding issues downstreams.

Issue #4: Surface water quality being negatively impacted by soil erosion and nonpoint source pollution.

Issue #5: Inadequate information and education of landowners about land use issues and conservation programs.

Issue #6: Spreading of Invasive species – both terrestrial and aquatic – including a new threat from the Emerald Ash Borer.

Issue #7: On-going issues with manure management – especially concerns over improper land application of liquid manure from expanding livestock operations.

Issue #8: Extreme weather events (heavy rain, heavy snow, etc.) caused by global climate change negatively impacting Dodge County land & water resources.

Issues #9. The contamination of private groundwater wells in karst areas (areas having shallow soils over bedrock)

Appendix B

Land & Water Resources Data / Information Provided by Technical Agency Advisors for 2012 Dodge County Land & Water Plan Revision

Data/Information from USDA-FSA:

- CRP acres converted out of CRP and back into cropland use from 2007 until 2012 was nearly 5,600 acres. In 2007 there were over 13,300 acres of land enrolled in CRP, and currently there is just over 7,700 acres still enrolled in CRP (equals a 42% reduction)

Data/Information from the DNR Forester:

- U.S. Forest Service data from 2010 indicates that there is nearly 38,000 acres of forested land in Dodge County. According to the same data source, in 2005 there was approximately 25,000 acres of forested land in Dodge County (would equal a net gain of 13,000 acres of forested land over the five year time period)
- There are currently just under 3,700 acres of forested land enrolled in the Managed Forest Law in Dodge County. This is approximately 100 acres more as compared to 2007.
- Three counties adjacent to Dodge County (Fond du Lac, Washington, and Waukesha) are under quarantine for all ash wood products and all firewood due to discovery of the Emerald Ash Borer in these counties. Dodge County has not yet been put under quarantine.

Data/Information from the DNR Fisheries Biologist:

- Copies of electrofishing reports for the following water bodies and years: (Fox Lake – 2011); (Beaver Dam Lake – 2010); (Lost Lake – 2011); (Lake Sinissippi – 2011); (Lake Emily – 2006). Reports appear to show fairly healthy populations of game fish such as Walleye and Largemouth Bass in both Fox Lake and Beaver Dam Lake. Lake Emily also appears to have a good population of bass. Reports appear to show a fairly healthy population of pinfish in several lakes. Bluegills were quite abundant in Lake Emily; a healthy population was found in Fox Lake; Beaver Dam Lake Bluegills were not as abundant, but yet present in the lake. Lost Lake has a good population of Bluegills. Black Crappie appear to be quite abundant in Fox Lake, and Beaver Dam Lake appears to have a good population; very few were detected in Lake Emily. Yellow Perch are also doing well in both Fox Lake and Beaver Dam Lake, and a good population was also found in Lost Lake. Except for a few walleye, few other game fish or pinfish were found in Lake Sinissippi – this lake is dominated by various species of “rough fish”.
- Copies of fyke netting reports for the following water bodies and years: (Beaver Dam Lake – 2010); (Lake Emily – 2006). Populations of Northern Pike appear to be on the rise in Beaver Dam Lake, and Walleye populations also appear to be quite high on Beaver Dam Lake. Fyke nets on Beaver Dam Lake also appear to confirm a growing population of Bass, Channel Catfish, and a variety of pinfish. Populations of Northern Pike on Lake Emily appear to be quite strong, with signs that fish may be naturally reproducing here.

Data/Information from the DNR Water Quality Specialist:

- Dodge County's Impaired Waters List: There appear to be a total of 24 water bodies in Dodge County that are considered impaired for one or more reasons (19 are rivers or streams, and 5 are lakes or mill ponds). Common reasons for being listed as impaired include:
 - (1) sediment/suspended solids – 18 rivers/streams and 3 lakes/millponds
 - (2) total phosphorus – 10 rivers/streams and 4 lakes/millponds
 - (3) ammonia - 3 rivers/streams
- 2010 Water Quality Management Plan Update for the Upper Rock River Watershed
- 2011 Water Quality Management Plan Update for the East Branch Rock River Watershed

Data/Information from the Wisconsin State Climatology Office:

- Powerpoint slide presentation entitled "Confronting Climate Change in the Great Lakes Region"

Data/Information from the Dodge County Land Resources and Parks Department:

- A listing of various maps and data sets that can be used in drafting the 2012 Dodge County Land & Water Resources Management Plan Revision

Appendix C

MEETING NOTICE

DODGE COUNTY LAND AND WATER RESOURCES MANAGEMENT PLAN REVISION CITIZEN'S ADVISORY COMMITTEE

**Tuesday, January 31, 2012 – 1:00 PM
Dodge County Administration Building – Room 1F & 1G**

Thank you for your willingness to serve on the Citizen's Advisory Committee to assist us in revising Dodge County's Land and Water Resources Management Plan. The Citizen's Advisory Committee will hold its first meeting on Tuesday, January 31, 2012 beginning at 1:00 PM in Room 1F and 1G of the Dodge County Administration Building, 127 East Oak Street, in Juneau. Primary items to be covered at this first meeting may include but are not limited to:

- Overview of the background and purpose of county Land & Water Resources Management Plans
- Review/discuss the 2007 Land & Water Resources Management Plan goals, objectives and action steps
- Review/discuss current land and water resources data/information provided by technical agency advisors
- Discuss/identify current land and water resources issues that may need to be addressed in the revised Dodge County plan

Enclosed with this meeting notice for your review is the advisory committee membership listing, as well as a copy of the 2007 Dodge County Land & Water Resources Management Plan. If you have the time, it may be helpful for you to review this plan, especially pages 59-70 which describe the goals, objectives and action items that were developed five years ago. I will also attempt to mail you additional data/information that may be submitted by technical agency advisors prior to our meeting on January 31st.

If you have any questions or comments, or if you will be unable to attend this meeting, please contact me, Marc Bethke, weekdays at (920) 386-3663, or you also reach me by e-mail at [mbethke@co.dodge.wi.us].

Once again, thank you for your willingness to serve and for having an interest in Dodge County's land and water resources.

Appendix D

MEETING NOTICE

DODGE COUNTY LAND AND WATER RESOURCES MANAGEMENT PLAN REVISION CITIZEN'S ADVISORY COMMITTEE

**Tuesday, February 28, 2012 – 1:00 PM
Dodge County Administration Building – Room 1F**

Once again, thank you for your willingness to serve on the Citizen's Advisory Committee (CAC) to assist us in revising Dodge County's Land and Water Resources Management Plan. The CAC will hold its second meeting on Tuesday, February 28, 2012 beginning at 1:00 PM in Room 1F of the Dodge County Administration Building, 127 East Oak Street, in Juneau. Primary items to be covered at this second meeting may include but are not limited to:

- Review/discuss the priority land and water resources issues identified at the January 31, 2012 CAC Meeting
- Allow for identification and categorization of additional land and water resource issues
- Discussion and general "brainstorming" of possible ways to address the resource issues identified (for the ultimate purpose of creating goals, objectives and action steps)

Enclosed with this meeting notice for your review is the prioritized listing of the land and water resource issues based on votes cast at the January 31, 2012 CAC meeting. The top issue on the list is **Groundwater Protection** with the various specific issues related to this issue receiving 8 votes; the second and third most critical issues are **Soil Erosion/Sediment Delivery** and **Farm Drainage/Wetland Management** with their respective specific issues related to each general issue, both receiving 6 votes, etc. Please note that I broke out and listed as a separate issue every general issue that received at least one vote. Finally, I grouped the four remaining issues that received no votes under "Other Miscellaneous Issues".

Also enclosed with this meeting notice for your consideration are some suggested questions to "ponder" in preparation for the CAC meeting on February 28th. These suggested questions to ponder are intended to help get our minds thinking about some possible ways that could be identified to resolve the land and water issues on the list, and are not meant to limit or micro-manage CAC discussion at the next meeting.

If you have any questions or comments, or if you will be unable to attend this meeting, please contact me, Marc Bethke, weekdays at (920) 386-3663, or you also reach me by e-mail at [mbethke@co.dodge.wi.us].

Appendix E

2012 Dodge County Land & Water Resources Management Plan Citizen's Advisory Committee

<u>Name</u>	<u>Representing</u>
<u>Kathy Rydquist</u>	<u>Fox Lake Inland Lake District</u>
<u>Bob Roell</u>	<u>Beaver Dam Lake Association</u>
<u>Jim Congdon</u>	<u>Rock River Coalition</u>
<u>Chris Olson</u>	<u>Friends of Horicon Marsh</u>
<u>Lori Leonard</u>	<u>Pheasants Forever</u>
<u>Jim Schoenike</u>	<u>Dodge County Farm Bureau</u>
<u>Tom Crave</u>	<u>Larger/Expanding Dairy Farmers</u>
<u>John Kraus Jr.</u>	<u>Cash Grain Farmers</u>
<u>Steve Guell</u>	<u>Smaller/Grazing Dairy Farmers</u>
<u>Steve Hoekstra</u>	<u>Market / Vegetable Farmers</u>

Appendix F

Conservation Practices and Activities to Encourage Practice Implementation

The following is a list of conservation practices listed in ATCP 50.08 and ATCP 50.62 – 50.98 that are eligible to receive cost share assistance under Dodge County’s Land & Water Resource Management Program, and which can be utilized in our efforts to achieve the goals and objectives outlined above:

- Land taken out of agricultural production [ATCP 50.08(3)]
- Riparian land taken out of agricultural production [ATCP 50.08(4); ATCP 50.42(1)]
- Manure Storage Systems [ATCP 50.62]
- Manure Storage Closure [ATCP 50.63]
- Barnyard Runoff Control Systems [ATCP 50.64]
- Access Road or Cattle Crossing [ATCP 50.65]
- Animal Trails and Walkways [ATCP 50.66]
- Contour Farming [ATCP 50.67]
- Cover and Green Manure Crop [ATCP 50.68]
- Critical Area Stabilization [ATCP 50.69]
- Diversions [ATCP 50.70]
- Field Windbreaks [ATCP 50.71]
- Filter Strips [ATCP 50.72]
- Grade Stabilization Structures [ATCP 50.73]
- Heavy Use Area Protection [ATCP 50.74]
- Livestock Fencing [ATCP 50.75]
- Livestock Watering Facilities [ATCP 50.76]
- Milking Center Waste Control Systems [ATCP 50.77]
- Nutrient Management [ATCP 50.78]
- Pesticide Management [ATCP 50.79]
- Prescribed Grazing [ATCP 50.80]
- Relocating/Relocating Animal Feeding Operations [ATCP 50.81]
- Residue Management [ATCP 50.82]
- Riparian Buffers [ATCP 50.83]
- Roofs [ATCP 50.84]
- Roof Runoff Systems [ATCP 50.85]
- Sediment Basins [ATCP 50.86]
- Sinkhole Treatment [ATCP 50.87]
- Streambank and Shoreline Protection [ATCP 50.88]
- Strip-Cropping [ATCP 50.89]
- Subsurface Drains [ATCP 50.90]
- Terrace Systems [ATCP 50.91]
- Underground Outlet [ATCP 50.92]
- Waste Transfer Systems [ATCP 50.93]
- Wastewater Treatment Strips [ATCP 50.94]

- Water and Sediment Control Basins [ATCP 50.95]
- Waterway Systems [ATCP 50.96]
- Well Decommissioning [ATCP 50.97]
- Wetland Restoration [ATCP 50.98]