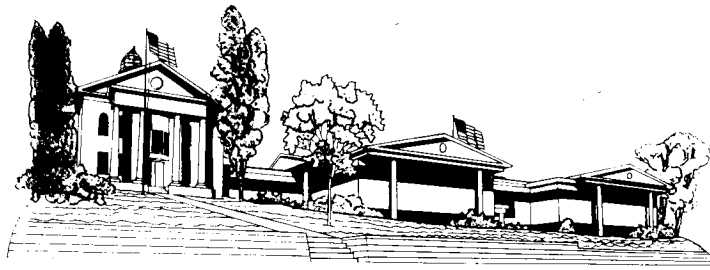


Dodge County



Comprehensive Water Management Plan 2006-2016



Dodge County Water Management Plan 2006-2016

Approved by Minnesota Board of Water and Soil
Resources on August 24, 2006

Adopted by County Board of Commissioners on
September 12, 2006

Amended Plan Approved by BWSR 12-14-2011

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Table of Contents

<i>Executive Summary</i>	<i>4</i>
<i>Priority Concerns, Goals & Objectives</i>	<i>6</i>
<i>Implementation Plan: Priorities, Budget & Schedule...</i>	<i>7</i>
<i>Core Activities.....</i>	<i>7</i>
<i>Accessory Activities.....</i>	<i>10</i>
 <i>Appendices:</i>	
<i>A: Priority Concerns Scoping Document 2005.....</i>	<i>14</i>
<i>B: Assessment of Priority Concerns.....</i>	<i>18</i>
<i>C: Protection & Restoration “Special Project Areas”.....</i>	<i>39</i>
<i>D: PRAP Level II Review Report 2009.....</i>	<i>42</i>
<i>E: Draft 2010 Dodge County Impaired Waters.....</i>	<i>63</i>

Executive Summary

Introduction

Dodge County is located in Southeast Minnesota. The county seat is Mantorville City located about 70 miles south of St. Paul. The population of the county in the year 2010 was 20,087. The projected population in the year 2020 is 22,250. The dominate land-use in the county is agriculture with about 83% of the total land area cultivated.

Local Water Management Plan

The County of Dodge is the local government unit responsible for the Comprehensive Local Water Management Plan authorized by MN Statute, Section 103B. The County's Environmental Quality Department is responsible for the administration of the Water Management Plan. The County's original Water Management Plan was adopted in 1990. The Plan was updated and approved by BWSR.

A 5-year amendment to the Executive Summary, Budget, and Implementation sections is required by 12-31-11. The amendment process, initiated by the Dodge County Board of Commissioners, (Resolution #2011-33, *Comprehensive Water Plan 5-Year Amendment*), involved obtaining input from meetings with the Dodge Technical Water Planning Committee, a group composed of state agency personnel from the Departments of Health, Agriculture, and Natural Resources, and representatives from the Natural Resource Conservation Service, Dodge Soil & Water Conservation District, and Dodge County Environmental Services. The Committee also included representatives from Dodge County municipalities, and the public.

Purpose of the Water Management Plan: Provide a framework and guideline for implementing actions that address priority concerns.

Priority Concerns Addressed in Plan (see Appendix A for Scoping Document):

1. Fertilizers and herbicides from agricultural fields seeping into drinking water
2. Nutrients and chemicals from animal feedlots flowing into rivers and streams
3. Nutrients and chemicals from animal feedlots seeping into drinking water
4. Soil, fertilizers and herbicides from agricultural fields flowing into rivers and streams
5. Loss of natural vegetation and habitat due to urban and rural development
6. Flash flooding or the quick rise and fall of water and stormwater management.
7. Inadequate individual septic systems, municipal sewers, and community systems that drain to field tile, wetlands, streams or rivers.

Water Management Goals: Safe drinking water in all aquifers and pollutant loads in protected waters below state and federal standards including Total Maximum Daily Limits.

Summary of Implementation Actions: "Core Activities" will be completed assuming that the current budget of \$290,000 is available annually with adjustments for inflation. Core activities include enforcement of wetland, feedlot, shoreland, septic system, waste management, and related zoning regulations. Core activities also

include on-going water testing programs designed to accurately judge conditions and trends in drinking water and rivers. A basic level of education, technical assistance, and financial assistance will be offered regularly. Core activities will be completed annually using existing staff.

“Accessory Activities” can be completed only if new sources of technical or financial assistance become available to the county. Examples of accessory activities include: purchase of aerial photographs, long-term groundwater and surface water monitoring stations, proactive education to promote agricultural best management practices, grants to restore wetlands, and implementation of South Zumbro Watershed Storm Water Capital Improvement Plan.

PRAP Evaluation: In October 2009, BWSR conducted a Level 2 Performance Review and Assistance Plan (PRAP) of Dodge County’s Comprehensive Water Plan implementation. Following is an excerpt from their conclusions:

The Dodge County Environmental Services Department is making good progress in implementing the core activities of its local water management plan. Moreover, the county has been able to pursue and apply resources to make progress on a majority of the accessory activities in the plan.

The county staff has taken a leadership position in the delivery of water management and land conservation services in Dodge County. They can point to successes in their engagement with citizens and landowners in the water monitoring program, expansion of capacity in their feedlot program, in expanded zoning authority, and in general environmental education. The county has also demonstrated the ability to work collaboratively with other local government entities to accomplish planned objectives.

The Dodge County Environmental Services Office is commended for meeting these high performance operational standards.

- *Annual plan priorities based on water quality trend data*
- *Data are collected to track outcomes for priority concerns*
- *Water quality trends tracked for priority water bodies*
- *Obtained stakeholder input within last 5 years*
- *Partnerships with SWCDs/watershed district on projects*
- *Track outcomes for public education objectives*
- *Local water plan is linked on the county website*
- *Water management ordinances on the county website*

The complete PRAP report can be referenced in Appendix D.

Consistency with Other Plans: The Water Management Plan is consistent with other local, state, and regional plans and controls. Implementation actions include efforts to work with municipalities to maintain consistency with the County’s plans and controls.

Priority Concerns, Goals and Objectives:

Priority Concerns Addressed in Plan (see Appendix A, Scoping Document):

1. Fertilizers and herbicides from agricultural fields seeping into drinking water
2. Nutrients and chemicals from animal feedlots flowing into rivers and streams
3. Nutrients and chemicals from animal feedlots seeping into drinking water
4. Soil, fertilizers and herbicides from agricultural fields flowing into rivers and streams
5. Loss of natural vegetation and habitat due to urban and rural development
6. Flash flooding or the quick rise and fall of water and stormwater management.
7. Inadequate individual septic systems, municipal sewers, and community systems that drain to field tile, wetlands, streams or rivers.

Assessment of Priority Concerns (See Appendix B)

Water Management Goals: Safe drinking water in all aquifers and pollutant loads in protected waters below state and federal standards including Total Maximum Daily Limits.

Water Management Plan Objectives: *(These objectives are expected to be satisfied on an annual basis through the completion of all core activities and accessory activities described in this plan).*

1. Track water quality trends in local drinking water aquifers and public waters.
2. Provide landowners with easy access to information about land uses and natural resources on their property.
3. Provide youth with the opportunity to learn about the connection between land use and water quality through school presentations and other educational efforts.
4. Landowners, governments, and businesses will comply with applicable regulations.
5. Farms will prepare and follow their Nutrient Management Plan.
6. Farms will follow MN Dept of Agriculture's Best Management Practices for pesticide and herbicide use.
7. Public waters and sensitive resources will be protected by permanent vegetative buffers
8. Educate landowners on the benefits and opportunities for the conversion of agricultural land to perennial vegetation and the preservation of natural areas.
9. Landowners with highly erodible land will manage their land to soil loss tolerance (2T or 2T Value).
10. Zoning regulations will promote growth near urban areas and encourage cluster development to preserve natural/open areas. (vegetation & habitat corridors)
11. Municipalities will adopt and enforce DNR's model Shoreland Zoning Regulations
12. Municipalities will adopt Stormwater Management Plans that address water quality and quantity, and account for projected growth.
13. Reduce runoff, increase water filtration, and depress the stream hydrograph on protected waters.
14. Wastewater will be properly treated and treatment systems properly maintained.
15. Public water suppliers will develop and implement their Wellhead Protection Plan.

Implementation Plan: Priorities, Budget, and Schedule

Priority Water Resources:

1. With limited local money, groundwater aquifer protection will take priority over surface water protection.
2. With limited local money, protection of the first encountered bedrock aquifer will take priority over lower aquifers.
3. With limited local money, watersheds with documented water quality exceeding state and federal standards will receive priority over watersheds without documented exceedances.

Existing Budget (2011):

1. State Natural Resources Block Grants and County Revenue	\$ Amount
a) Water Management Plan Implementation	\$50,000
b) Feedlot Regulation	\$ 63,000
c) Shoreland Regulation	\$ 6,000
d) Wetland Regulation	\$ 33,000
e) Sewage Treatment System Regulation	\$ 78,000
2. Soil and Water Conservation District	\$ Inkind
3. State and Federal Agencies	\$ Inkind
4. Private Contributions	\$ Inkind
5. Environmental Trust Fund	\$ 60,000
Total	\$290,000

Core Activities: The following are actions that can be accomplished annually using existing staff and budget assuming that the Natural Resources Block Grant is awarded annually at the current amount with regular inflationary adjustments:

1. **Inventory and Mapping** (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):
 - a) Annually update data and maps in County's Environmental Atlas. Distribute atlas to elected officials, policy makers, and staff. Within 5 years make atlas available on the County's Web Page.
 - b) Regularly update County Well Index by field locating newly drilled wells and wells with construction and water quality information.
2. **Groundwater Monitoring:** (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):
 - a) Provide well water testing service to public. Assign lab results to well record in County Well Index.
 - b) Coordinate a network of citizen volunteers to sample their wells over a long period of time to determine trends.

3. Surface Water Monitoring: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Maintain network of volunteer stream monitors to collect turbidity tube measurements and macroinvertebrate samples.
 - b) Maintain existing automatic sampling station.
 - c) Seek out and actively participate in Total Maximum Daily Load (TMDL) studies and grant opportunities which seek to clarify information relating to surface water conditions, health risk, and pollutant transport. Pursue partnerships with government agencies and other groups to aid in this effort.
4. Education and Technical Assistance: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Annually summarize drinking water quality conditions per aquifer and report to local elected officials, state agencies, and public.
 - b) Annually summarize surface water quality conditions per watershed and report to local elected officials, state agencies, and public.
 - c) Distribute at least 6 “news releases” per year to all local newspapers.
 - d) Support SWCD’s long-standing annual “conservation lesson” for middle school students.
 - e) Annually advertise in local newspaper or through direct mailings, a summary of regulations related to water and waste management.
 - f) Annually advertise in local newspaper or through direct mailings, a summary of local services related to water management including technical and financial assistance.
 - g) Provide technical assistance upon request for information related to existing regulation and incentive programs.
 - h) Create, update, and make available to public; brochures and publications related to water management. Seek opportunities that promote citizen engagement among county residents in programs dealing with ground water and surface water protection/restoration.
 - i) Include information on the County’s Web Page.
 - j) Support and encourage enrollment in all land set-aside programs that help implement the objectives of the Water Management Plan including, but not limited to, CRP, CREP, RIM, WRP, CSP, WREP, etc. Focus attention on “Special Project Areas” in the county where greater attention is directed to the protection and restoration of highly-valued resource areas, and the encouragement of practices that retain water on the land. See Appendix C for the location of special project areas, including sensitive ground water areas, flood-prone regions, and watersheds, such as the Cedar River, Milliken Creek, and the Middle Fork Zumbro River, with specific environmental concerns.
 - k) Inform all landowners and contractors of the important functions of wetlands. Also provide information and technical assistance that helps landowners recognize wetlands, how to protect them and how to restore them.
 - l) Evaluate options to encourage and/or require vegetative buffers along the shoreland of wetlands and streams not identified as public waters.
 - m) Assist municipalities to develop, implement, and enforce their Wellhead Protection Plans.

5. Financial Assistance: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Provide opportunity for landowners to obtain an AgBMP Loan.
 - b) Provide opportunity for landowners to obtain a grant from the County’s Environmental Trust Fund for actions that are consistent with the objectives of the Water Management Plan.
 - c) Provide opportunity for well owners to receive a free water testing kit if the well is shallow (< 60’ deep), the resident of the home is expecting a child or has an infant less than 1 year old, or if the well has never before been tested.
 - d) Seek funding through the Citizen and Community Participation Program in order to aid community partners in the implementation of practices designed to reduce stormwater runoff and retain water on the land.
6. Regulation, Ordinance, Planning: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Implement the County's Water Management Plan, Comprehensive Land Use Plan, and Solid Waste Management Plan and enforce related ordinance. Existing regulations include: individual sewage treatment systems, wetlands, shoreland, floodplains, storm water, waste disposal, recycling, feedlots, contaminated soil, and land use (zoning).
 - b) Regularly update plans and ordinances.
 - c) Propose a county-wide policy that defines the county’s position and responsibility for stormwater flow management in the context of an entire watershed. In other words, define what the county’s role is in reducing impacts of flash floods and sedimentation affecting downstream neighbors.
 - d) As time allows, assist local governments implement similar regulations.
 - e) Review public drainage regulation and determine how implementation would help meet objectives of the water management plan.
 - f) The County will work with the Cedar River Watershed District (CRWD) in the implementation of their existing rules as they pertain to the Water Plan.
 - g) Develop strategies to protect higher quality ground water and surface water systems and address concerns of lower quality systems. Consider related zoning amendments that conform to the objectives of the water management plan.
 - h) Dodge County plans to close, and place final cover on, its demolition landfill in accordance with Minnesota Pollution Control Agency rule.
7. Administration and Coordination: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) The County will carry-out the Local Water Management Plan including annual activity planning, staffing, contracting, and reporting.
 - b) The County will collaborate with partners to reach shared goals and objectives. Partners include Federal Agencies, State Agencies, Soil and Water Conservation District, Watershed Districts and Partnerships, Local Governments, Joint Powers Boards, not for profit organizations, businesses, and individuals. When possible the County will jointly work on “accessory activities” as outlined below:

Accessory Activities: Successful implementation of the following actions is largely dependent on new sources of technical and financial assistance. The county will pursue private, non-profit, and government partners to share in the cost and implementation of accessory activities including:

1. Inventory and Mapping: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Obtain annual aerial photographs at a scale that will improve accuracy of inventories and improve ability to educate public, provide technical assistance and enforce regulations.
 - b) Make Environmental Atlas an interactive product on internet that allows user to overlay multiple themes and analyze data.
 - c) Seek out and actively participate in research studies which seek to clarify information relating to pollutant transport, ground water sensitivity, surface water conditions and health risk.
 - d) Map and Inventory condition of existing buffers on Protected Waters.
 - e) Update Feedlot Inventory.
 - f) Inventory of unique, rare and endangered natural habitat.
 - g) Compile flood damage information.
 - h) Identify primary sources of soil erosion at a sub watershed scale and calculate amount of soil lost to streams.
 - i) Pursue updated FEMA flood maps.
2. Groundwater Monitoring: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Regularly obtain (and pay for) groundwater samples from a network of drinking water wells to provide baseline and long-term trends of water quality in primary aquifers.
 - b) Seek out and actively participate in research studies which seek to clarify information relating to pollutant transport, ground water sensitivity, and health risk.
 - c) Gain more information about potential risks from manure storage basins; earthen and concrete construction.
 - d) Study soil sampling protocol to help define opportunities for improving use of soil testing data by landowners.
 - e) Seek out and actively participate in research studies and grant opportunities which pertain to increasing our knowledge of groundwater trends and protecting sensitive ground water areas of the county, particularly, those areas of northern and eastern Dodge County where the first carbonate aquifer has no shale or clay protection.
3. Surface Water Monitoring: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Continue to monitor Salem Creek (impaired water) for fecal coliform bacteria and assist landowners in evaluating options to reduce fecal contributions including feedlot runoff, manure land spreading, and septic systems.
 - b) Expand the number volunteer stream monitors to accurately judge conditions of all sub watersheds.

- c) Install and operate continuous flow meters on primary river segments.
- d) Expand the sampling program to a point when one or two water quality parameters can be recognized by the general public as indicators of water quality and the conditions that lead to said quality.
- e) Seek out and actively participate in research and grant opportunities which seek to clarify information relating to pollutant transport, surface water conditions, and health risk. Direct special attention to low floodland areas of the county and projects which emphasize the county's upland water retention potential from its position at the top of 3 watersheds.
- f) Demonstrate soil erosion control features at farm scale.
- g) Work with MPCA, and other agencies, to establish and maintain surface water monitoring sites on a small subwatershed, such as Milliken Creek, to record trends in water quality/quantity and track impacts of land management practices.
- h) Assist MPCA in their work on the Watershed Restoration and Protection Program (WRAP), scheduled to begin in the Zumbro Watershed in 2012.
- i) Utilize TMDL Implementation Plans to develop projects for streams in the county identified as impaired and listed on the Clean Water Act 303(d) list. Stream reaches in Dodge County currently on that list, which is amended every 2 years, are shown in Appendix E.

4. Education and Technical Assistance: (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):

- a) Support cooperative education efforts, and demonstration projects, to promote Agricultural BMP's including, but not limited to: nutrient management (including reduction in fall application of nitrogen), conservation drainage systems to promote water storage capabilities, buffers for protected waters and sensitive features like sinkholes, soil testing, pesticide application, etc...
- b) Inform all citizens of the importance of sealing unused wells.
- c) Demonstrate options for treatment of milkhouse waste.
- d) Assist municipalities to develop and enforce a Shoreland Overlay Zoning District, and Stormwater Management Plan. Partner with them, and provide technical assistance, on grant opportunities designed to improve surface and ground water in the county. Where appropriate, assist with city storm water projects.
- e) Lead the effort to write a plan with goal to repair all failing septic systems. Part of the plan should be education and incentives to encourage homeowners to voluntarily repair their failing septic systems. Education should include information about the risks of a failing system, how to recognize a failing system, how to repair it, and where to get financial assistance. The education should include a comparison of the "facts vs. myths" regarding mound type individual sewage treatment systems.
- f) Lead a demonstration of Stormwater Management techniques, conducted on a "farm scale" or construction site, that illustrate methods to retain and treat storm water runoff including wetland restoration.
- g) Identify additional "special project areas" of the county where conditions merit special attention to ground and surface waters issues due to susceptibility to pollutants, or opportunities for increased utilization. Pursue funding and partnerships, where appropriate, to address these issues.

5. Financial Assistance: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):

In addition to existing grant and loan programs, seek opportunities for financial assistance for activities such as:

- a) Grants to feedlot owners to fix physical conditions that pose a pollution potential.
- b) Low interest loans for replacing septic systems. The loan payback system should include an option for a special assessment payable on the property tax statement.
- c) Grants to landowners who seek to implement practices designed to retain water on the land, e.g., wetland protection and restoration.

6. Regulation, Ordinance, Planning: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):

- a) Implement the South Zumbro Watershed Storm Water and Capital Improvement Plan.
- b) Adopt a policy and process that supports full enforcement of MN Rule 7020 including: regularly verifying that Manure Management Plans are properly implemented, regularly inspecting feedlots for compliance, and enforcing Open Lot Agreements. Inspections should occur on 20% of the feedlots each year. Enforcement policy should include easily administered penalties for violations.
- c) Adopt a policy and process that supports full enforcement of stormwater management and erosion control standards including standards found in the Zoning Ordinance and construction stormwater permits.
- d) Encourage growth in or near the cities, utilizing city services. Discourage expansion of the designated Urban Expansion District (2005 Zoning Ordinance) prior to completion or full development within the current boundary.
- e) Discourage large-lot rural housing outside the Urban Expansion District. Encourage cluster, low impact development with associated open space where rural subdivisions are allowed.
- f) Support efforts to protect unique natural resources and open space.
- g) Support efforts to sunset old plats in rural areas that have not been developed (see Goodhue Co. as example).
- h) Lead in the implementation of a system that tracks compliance with septic system maintenance standards and regularly notifies the owner when maintenance is due.
- i) Evaluate the pros and cons of a “soil loss ordinance”; consider options for implementation in the county.
- j) Require landowners to be in compliance with all regulations as a condition of approval of any zoning permit (even regulations unrelated to the permit request; for example....proof of compliance with shoreland buffer standards on all land before a zoning permit for a structure is approved.)
- k) Utilize, or encourage utilization of, the state public drainage regulation and code.

7. Administration and Coordination: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
- a) The County will collaborate with partners to reach shared goals and objectives. Partners include Soil and Water Conservation District Federal Agencies, State Agencies, Local Governments, Joint Powers Boards, not for profit organizations, businesses, and individuals.
 - b) The county, when practical, will develop work plans for completing accessory actions and apply for grants to complete the work plans.

APPENDIX A

DODGE COUNTY WATER MANAGEMENT PLAN UPDATE; 2006 - 2016 PRIORITY CONCERNS SCOPING DOCUMENT, JUNE 2005

Introduction

Dodge County is located in Southeast Minnesota. The county seat is Mantorville City located about 70 miles south of St. Paul. The extrapolated population of the county in the year 2005 is 18,790. The projected population in the year 2020 is 22,250. The dominate land-use in the county is agriculture with about 83% of the total land area cultivated.

Local Water Management Plan

The County of Dodge is the local government unit responsible for the Comprehensive Local Water Management Plan authorized by MN Statute, Section 1038. The County's Environmental Quality Department is responsible for the administration of the Water Management Plan. The County's original Water Management Plan was adopted in 1990. The Plan was updated in 1996 and will expire at the end of 2005.

List of Priority Concerns

1. Fertilizers and herbicides from agricultural fields seeping into drinking water.
2. Nutrients and chemicals from animal feedlots flowing into rivers and streams.
3. Nutrients and chemicals from animal feedlots seeping into drinking water.
4. Soil, fertilizers, and herbicides from agricultural fields flowing into rivers and streams.
5. Loss of natural vegetation and habitat due to urban and rural development.
6. Flash flooding, or the quick rise and fall of water, and storm water management.
7. Inadequate individual septic systems, municipal sewers, and community systems that drain to field tile, wetlands, rivers, streams.

Priority Concern Identification

The Water Planning Task Force gathered input from the following:

- 1: Written questionnaire sent by mail to local and state governments returned by January 31, 2005.
2. Written questionnaire sent by mail to special interest groups returned by January 31, 2005
3. Written questionnaire sent by mail to 10% of the county's households in each township and city returned by Feb 1, 2005.

Water Management Priority Concerns

Survey Summary for State and Federal Agencies

Farm Service Agency (County Committee)

1. Soil eroding from ag fields and running into rivers and streams
2. Failing Septic Systems
3. Testing to determine if water is improving or getting worse.

SWCD

1. Water resource protection
2. Wastewater runoff control/CNMP
3. Soil erosion (gully),
4. Soil erosion (VA)
5. Impaired waters

MN Board of Water and Soil Resources

1. Prevention of erosion of agriculture soils
2. Drainage system maintenance and repair
3. Storm water runoff and sediment delivery from impervious surfaces and construction sites.
4. Conservation buffers

MN EQB

1. None: just information supplied

MN Dept of Agriculture

1. Pesticides in surface water.
2. Pesticides in groundwater
3. Manure management
4. ISTS

MPCA

1. Impaired waters/total maximum daily Load (TMDL).
2. Animal Agriculture, Feedlots and Manure Management
3. Ground Water Protection and Management
4. Stormwater Management: Rural, Urban and suburban
5. Priority Sub-watershed

MNDNR

1. Creation of buffers on ditches, streams and rivers
2. Ag. Best Management Practices
3. Groundwater protection in Karst areas
4. Loss and fragmentation of natural areas
5. Stormwater management in developing areas
6. Priority areas in Dodge County

Water Management Priority Concerns
Survey Summary for Townships and Cities

Ashland Township

1. Nutrients, chemicals from feedlots seeping into drinking water.
2. Need more testing to determine if water is improving or getting worse.
3. Need more enforcement.

Concord Township

1. Soil eroding from agricultural fields, depositing into road ditches and rivers and streams.
2. Nutrients and chemicals from animal feedlots flowing into streams and rivers.
3. Flash flooding or the quick rise and fall of water levels in river.

City of Hayfield

1. Nitrates in drinking water

Vernon Township

1. Fertilizers and herbicides from ag fields flowing into rivers and streams.

Minutes
Water Plan Public Input Meeting About Priority Concerns
March 14, 2005 at Dodge County Courthouse, Mantorville Conf Rm B

Water Plan Task Members Attending: Kenneth Folie, Mark Gamm, Jim Hruska, Dave Peterson, Sandy Schaefer, Dean Schrandt, Bill Thompson, Orlo Toquam, and Commissioner David Hanson. List of attendees attached.

Mark Gamm opened the meeting at 7:00 PM. He explained the purpose of the meeting and the update process for the Dodge County Local Water Management Plan.

Dean Schrandt presented an assessment of current water quality in Dodge County; followed with Mark Gamm explaining the land use in Dodge County and where contaminants come from. The task force used this information along with surveys of citizens, special interest groups, and local and state government agencies to develop priority concerns to update the Water Management Plan. The recommended priority concerns are as follows:

1. Fertilizers and herbicides from agricultural fields seeping into drinking water.
2. Nutrients and chemicals from animal feedlots flowing into rivers and streams.
3. Nutrients and chemicals from animal feedlots seeping into drinking water.
4. Fertilizers and herbicides from agricultural fields flowing into rivers and streams.
5. Loss of natural vegetation and habitat due to urban and rural development.
6. Drainage: flash flooding, storm water management, and wetland restoration.
7. Inadequate sewage treatment: individual, community, and municipal treatment systems.
8. Soil eroding from Ag fields and running into rivers and streams.

The Task Force Recommends Groundwater (Drinking Water) as the county's highest priority for protection.

The Task Force acknowledges that planned actions should include:

1. More testing to determine if water is improving or getting worse
2. More enforcement of current regulations that protect our water

Gamm then opened the meeting for discussion and comments.

- Comment in support of recommended priority concerns because of our predominant land-use.
- Comment asking if state standard for fecal bacteria at 200 bacteria organisms per 100 ml was realistic for Dodge County?
- Bill Thompson commented that the standard was set by EPA and numbers in SE MN were typically 2-6 times above that.
- Comment about the new Zumbro Watershed Partnership, developing data for impaired waters and their desire to have Dodge County representation

APPENDIX B

DODGE COUNTY WATER MANAGEMENT PLAN 2006 - 2016

Assessment of Priority Concerns

1. Fertilizers & herbicides from agricultural fields leaching into drinking water.

Pollutants leaching into the drinking water (groundwater) are a concern for several reasons:

- 1) Areas of high groundwater sensitivity exist in the east & northeast portions of the county due to shallow depth-to-bedrock conditions, and in the western portion of the county due to the presence of a shallow sand aquifer. (See Fig. 1 - 2).
- 2) Existing water quality data from well testing has indicated that elevated levels of nitrate, associated with increased nitrate use on cultivated land, are already present, primarily in the groundwater sensitive areas. (See Fig. 3 - 5).
- 3) In general, for wells with a history of water quality data, levels of nitrate are remaining the same, or increasing, sometimes at a relatively rapid rate (See Fig. 6).
- 4) The east/northeast portion of Dodge County, in addition to having shallow depth-to-bedrock, also has many karst features, indicating the presence of a fractured first aquifer, and resultant quickened movement of groundwater through the aquifer. (See Fig. 7 - 8).
- 5) Dodge County's land use is highly agricultural, necessitating the use of large amounts of fertilizers & herbicides. Therefore, nitrogen loading estimates for different land uses in the county indicate the great majority of nitrogen loss, much of it which seeps into the drinking water, occurs on cultivated land. It is believed that the majority of this nitrogen loss comes from commercial fertilizer, which greatly surpasses the amount of manure utilized. (See Fig. 9 - 10).
- 6) Nitrate probability maps for Dodge County, recently generated by the Minnesota Department of Health, indicate areas in which the first aquifer is more likely to contain elevated levels of nitrate, information which may prove useful in future land use decisions. (See Fig. 11)

Bacteria in groundwater, can be linked to manure on rare occasions, but is usually due to well-specific conditions, such as age and well construction (See Fig. 12).

Herbicides, pesticides, and their breakdown products, can be measured in groundwater. Dodge County has little or no data in this area, though statewide data from the MN Department of Agriculture indicates that nearly 70% of groundwater samples gathered between 1985 – 1994 contain no detectable levels of atrazine. More than 95% of those do contain levels between 0.1 – 0.5 ppb, far below the Health Risk Limit of 20 ppb. (See Fig. 13 - 14).

The health risks associated with elevated nitrate in drinking water are well known, especially for infants and expectant mothers, as it is the direct cause of "blue-baby disease", a potentially fatal condition. Those families living in the highly sensitive groundwater areas of the county are of primary concern, especially if they obtain their drinking water from the first aquifer, as is believed to be the case for more than half of those households.

Other areas of the county especially susceptible to drinking water contamination are those believed to be near the Decorah Edge, which refers to the border where the Cummingsville limestone gives way to the Decorah shale as the first-encountered bedrock layer. In these areas, it is thought that contaminants may travel across the edge of the Decorah shale into deeper aquifers below, placing wells in those aquifers at risk for contamination. (See Fig. 15 - 16).

2. Nutrients and chemicals from animal feedlots flowing into rivers and streams.

This concern is essentially an issue of runoff and runoff control measures. Dodge County has identified a High Priority Feedlot Area consisting of areas that are within 300 feet of DNR Protected Waters and/or within the high groundwater sensitivity area discussed previously. The county is actively engaged in visiting feedlots in this High Priority Area to determine if they pose a runoff risk. Those that do are encouraged to enter into an Open Lot Agreement (OLA) while feedlot fixes are developed and implemented. (See Fig. 17 – 19).

Thus far, of the 90 feedlots in the High Priority Area that do pose a runoff risk, 28 have developed or implemented complete or partial fixes. Manure management planning often accompanies the planned fixes.

Feedlot runoff into rivers and streams is but one component of the total contaminant load entering our surface waters. These will be assessed more completely in Priority Concern #4. However, feedlots without runoff controls can be a sizable source of contaminants to our surface waters, especially during heavy rain and runoff events.

3. Nutrients and chemicals from animal feedlots leaching into drinking water.

Assessment for this priority concern will be somewhat similar to issues discussed previously in #1 above, as they both deal with groundwater. Currently Dodge County has limited data on the groundwater directly below or in close proximity to feedlots. In 1994, a study by the MPCA of tile lines around a liquid manure basin in Dodge County showed some increase in the levels of nitrate and other contaminants, though not enough information was gathered to draw firm conclusions. It is assumed that this is more of a concern in the highly sensitive groundwater areas of our county, where depth to bedrock is shallow, allowing quick transit of surface contaminants to the first aquifer. This is especially true in the groundwater sensitive east and northeast regions of the

county, where a contaminant source can quickly pollute the drinking water source for many residents. (See Fig. 20 - 21).

4. Soil, fertilizers, and herbicides from agricultural fields flowing into rivers and streams.

This priority concern has garnered a good deal of attention as of late, and will likely continue to do so with the prospect of more and more efforts being directed toward meeting Total Maximum Daily Load Standards (TMDL) for surface water. Local Dodge County data on the following contaminants is somewhat limited:

1) Nitrate in surface water, derived from fertilizer in excess of crop needs, and most often carried by tile lines into our streams, is fast gaining attention as it is believed to be partially responsible for the increasing hypoxia zone in the Gulf of Mexico. This is a county-wide issue, but is of special concern near rivers and stream. Though county data sets are minimal, statewide results show an ever-increasing level of nitrate in Minnesota waters. Riparian zones, filter strips, and crops, such as alfalfa, which retain soil on the land, are among other remediation efforts known to be successful in reducing the amount of nitrate-nitrogen which enters the streams. (See Fig. 22 – 25).

2) Fecal coliform bacteria, derived from human and animal waste, is present in levels greater than the Health Risk Level (HRL) of 200 colonies/100 ml for surface water, established by the Minnesota Department of Health, in many of the streams in southeastern Minnesota. A study recently concluded on Salem Creek found bacteria levels 3 times greater than the standard over a 3 year period. It is anticipated that this issue will draw greater attention, and TMDL activity, in the near future. Sources of fecal coliform bacteria are many, varied, and seasonal, with the bulk of the inputs derived from surface applied manure, feedlots and pastures without runoff controls, and failing septic systems, especially those hooked to tile lines. There is a growing amount of research being conducted to determine fecal sources and transport.

(See Fig. 26 – 28).

3) Phosphorus is another stream contaminant gathering attention. It has long been known to be the limiting factor for algae growth in lakes, and is now also believed to play the same role for the hypoxia zone. Again, Dodge County has minimal data regarding phosphorus in its streams, but its link to fertilizer, runoff, and bare ground exposure (e.g. stream bank cuts) is known and documented. (See Fig. 29 – 30).

4) Pesticide contamination in surface water is directly linked to runoff. Dodge County has reliable data regarding pesticide application rates. A small set of data exists for pesticides present in Dodge County streams which appears to indicate that high pesticide levels are rare in surface water and linked to storm events. More data exists for the Whitewater and Root Rivers, as well as some data for springs in southeastern Minnesota. (See Fig. 31 – 33).

5) Loss of soil to runoff and a resultant increase in stream sediment is a principal driver for many of Dodge County's environmental efforts. Soil acts as both a transfer method for contaminants during runoff events, and a sediment source which has deleterious effects on a stream's ability to support life, as well as its aesthetic value. Data from the NRCS indicates that while the great majority of soil loss comes from cultivated cropland, the rate of sheet and rill erosion in Minnesota has decreased from 2.6 tons/acre/year in 1982 to 2.1 tons/acre/year in 1997, Information from the NRI was not used in this assessment due to an insufficient number of existing sampling sites in the county necessary to provide accurate data. Highly erodible soils, common in the northeast and east portions of the county, are especially susceptible to erosion and their use as cultivated cropland requires a conservation plan. As with many other surface water contaminants, the impact of soil lost to surface waters extends far beyond county borders. (See Fig. 34 — 39).

Dodge County monitoring efforts in this area have been mostly volunteer to this point. A group of approximately 20 citizen volunteers have been monitoring water clarity for the last 6 years utilizing transparency tubes. In addition, in 2006 the county will begin to measure turbidity at regular intervals at a permanent monitoring station. Both turbidity and transparency can be used to give an indication of the sediment present in a stream. The transparency tube work has resulted in the inclusion of certain Dodge County stream segments for inclusion in the impaired waters list. (See Fig. 40 — 41).

Land conservation programs (e.g., CRP, CREP, RIM, and WRP) are a principal tool in efforts to combat soil loss and slow the movement of rainwater off of the land. Statistics for these programs show that 1.6% of Dodge County's 226,716 cropland acres are enrolled. Among neighboring counties, Mower shows a similar 1.7% rate, while other adjacent counties average a 4.9% enrollment rate. Dodge County's position as the headwaters of the Zumbro and Cedar Rivers may partially explain this result, as these areas are typically easier and more profitable to farm. (See Fig. 42 — 43).

5. Loss of natural vegetation and habitat due to urban and rural development.

As population growth occurs, loss of natural vegetation and habitat that has natural resource value associated with it becomes a concern. This is especially true in the faster growth areas in and around Kasson, Mantorville, and Dodge Center, where the urban expansion areas contain over 2200 acres of land designated by the DNR as having medium or higher natural resource value. The risk, of course, is that these areas, especially those of high and very high value, cannot be recreated once development has occurred. (See Fig. 44 — 45),

Based on data from the state demographer's office, population predictions have been generated through the year 2030, as well as estimates of the amount of urban expansion area which will be required to accommodate this growth. Cities in the county as a whole are increasing in population at the rate of 2.7%/year, and townships at 1.2%, although those numbers vary widely between the higher and lower growth areas of the county. For the county as a whole, and for each of the growth areas mentioned above,

it appears that enough designated urban expansion area exists to accommodate city and urban expansion residential growth through the year 2030, assuming that growth rates from 2000 – 2004 do not change greatly. The development of rural residential subdivisions, away from urban growth areas has slowed, with the adoption, in 2002, of an ordinance restricting the ability to rezone agricultural land to residential. Rural residential development is likely to occur only near existing high density housing areas based on current zoning regulations. (See Fig. 46 – 48).

6. Flash flooding, or the quick rise and fall of water and stormwater management.

Flash flooding and stormwater management are county-wide concerns that coincide with several other priority concerns in an overall effort to regulate the stream hydrograph and slow the passage of water off of the land. In Dodge County, seven flash floods have been recorded since 1998, totaling \$1.7 million dollars in property and crop damage, primarily in shore land and flood plain areas. Precipitation records over the same period indicate that the county is experiencing a wet cycle, with every year, except 2003, experiencing higher, sometimes much higher, than average precipitation. In recent years, the occurrence of an unusual number of severe storms has often overcome existing remediation efforts, such as filter strips and waterways, and resulted in the introduction of large amounts of water and sediment into the streams. Increased efforts to manage agricultural lands using techniques such as proper crop residues, buffers, and wetland restoration, will aid in controlling runoff, especially during pre-canopy conditions. (See Fig. 49 – 51).

With the release in 2005 of MPCA's new State Stormwater Regulatory Program (Minnesota Rules, Chapter 7090), management regulations for new construction are essentially established, though actual results in this area have not always been successful. Frequently, stormwater management and enforcement appear to be a low priority for the cities involved. Likewise, even when adequate stormwater plans are designed for new construction, they are, at times, not fully implemented, resulting in inadequate protection. Education and enforcement efforts in this area are a logical part of an updated water plan.

7. Inadequate individual septic systems, municipal sewers, and community systems that drain to field tile, wetlands, streams, or rivers.

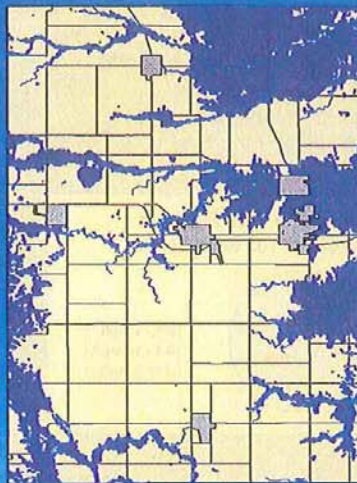
Failing or inadequate septic systems that run to the surface, ditches, or tile lines create a health threat to humans, as well as a possible source of surface water contaminants. Dodge County has reliable data on new, or repaired, individual septic systems dating back to 1993, shortly after passage of the first septic ordinance. The ordinance was revised in 1998, and is approaching another revision targeted for April of 2006. After the revision is in place, the work plan will include special efforts to upgrade systems which pose an imminent health threat.

The newest revision includes a provision requiring the updating of septic systems to meet code upon property transfer. This represents part of an effort to deal with the estimated 1700 septic systems in the county whose condition is unknown. Of those, 1200 are thought to be failing, including 600 which may be an imminent health threat, discharging an estimated 50 million gallons of untreated sewage per year. Most at risk may be those systems in the highly groundwater sensitive areas of the county (the east and northeast portions) where shallow depth-to-bedrock conditions exist. (See Fig. 52 – 53).

The status of the county's municipal systems is somewhat varied: Currently, Kasson and Hayfield appear to have adequately functioning systems, while West Concord, Dodge Center, and Claremont have either recently upgraded, or are in the process of upgrading, their systems to meet demand. Mantorville's system may soon be inadequate, especially as they consider adding to the existing system some of the city's 150 homes which currently have individual septic systems.

Community septic systems are in place in many of the subdivisions built in the last 10 years, and this practice will likely continue to be frequently utilized in new subdivisions.

Figure 1: Groundwater Sensitive Areas in Dodge County

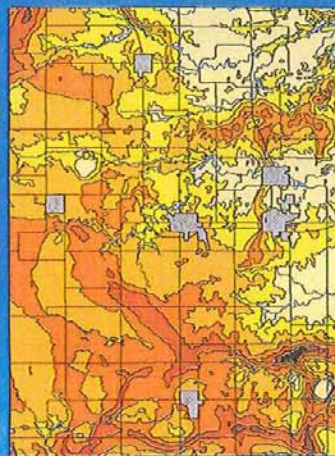


Dodge County
Groundwater Sensitive
Areas

Groundwater
Sensitive
Areas

Source: Department of
Natural Resources

Figure 2: Depth-to-Bedrock in Dodge County



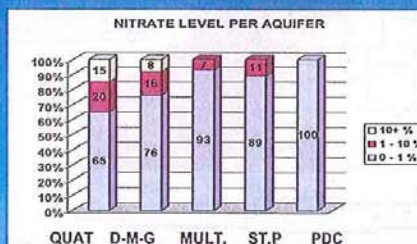
Dodge County
Depth-To-Bedrock

Depth-To-Bedrock:
0-50 ft
50-100 ft
100-150 ft
150-200 ft
200-250 ft
250-300 ft
300-350 ft

Source: Department of
Natural Resources

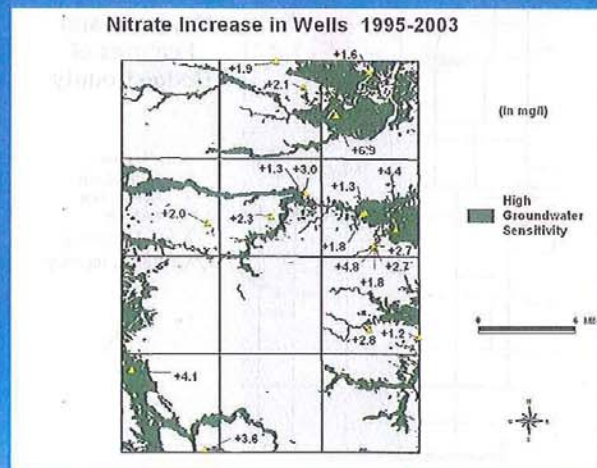
Figure 5: Aquifer/Nitrate Summary for Dodge County Wells

AQUIFER/NITRATE SUMMARY FOR DODGE COUNTY WELLS TESTED 1996 - 2001			
AQUIFER	NITRATE LEVEL		
	0 - 1 mg/l	1 - 10 mg/l	10 + mg/l
QUATERNARY	65%	20%	15%
DUBUQUE-MAKOQUETA-GALENA	76	16	8
MULTIPLE	93	7	0
ST. PETER	89	11	0
PRAIRIE du CHIEN-JORDAN	100	0	0



Source: Dodge County Well Index

Figure 6: Nitrate Increase in Dodge County Wells



Source: Dodge County Well Index

Figure 9: Estimated Nitrogen Loading and Loss In Dodge County

Land Use	Total Acres	Total Pounds Nitrogen Loaded/Year	Total Pounds Nitrogen Loss* Per Year
Cultivated Land	232,666	25,600,000	5,120,000
Grass Pasture Shrub	15,418	154,000	31,000
Forest	14,577	146,000	29,000
Urban	5,326	266,000	43,000
Farmstead & Rural Home w/Septic Syst.	5,326	224,000	75,000
Water & Wetland	4,485	45,000	9,000
Residential Subdivisions with Septic Systems	1,962	82,000	27,000
Mining & Other	560	6,000	6,000

Sources: Loading and Loss rates from Olmsted County Nitrogen Budget, U of M Research, and MN Dept of Agriculture. * Nitrogen loss is the amount of nitrogen found below the root zone, available for leaching.

Figure 10: Nitrogen Loading - Livestock vs Commercial Fertilizer

Fertilizer Type	Nitrogen Applied: Acres/Year	% of Total Acres
Turkey Manure	5,000	3%
Hog Manure	10,500	7%
Cattle Manure	15,000	10%
Commercial Fertilizer	125,000	80%
Total	155,500	100%

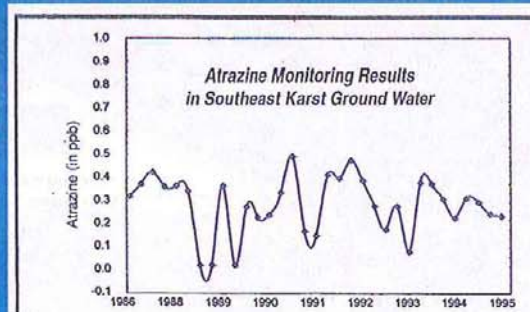
Source: Dodge County Livestock Statistics

Figure 50: Pesticide Detection in Minnesota Groundwater

PESTICIDE DETECTION Results of MDA Ground Water Monitoring 1985-1994				
Pesticide	Wells sampled	No detection	Detection at ≤ 1 ppb	TOTAL No detection or ≤ 1 ppb
Atrazine	432	68.8%	25.5%	94.3%
Alachlor	427	95.3%	3.7%	99.0%
Cyanazine	427	97.4%	2.1%	99.5%
Metolachlor	427	98.6%	0.9%	99.5%
Metribuzin	427	98.4%	1.2%	99.6%

Source: Minnesota Dept. of Agriculture

Figure 31: Atrazine Levels in SE Minnesota Groundwater



Source: Minnesota Dept. of Agriculture

Figure 17: Registered Feedlots in Dodge County

Feedlot Size	Number of Feedlots
0 – 100 (A.U.)	299
100 – 299	142
300 – 499	33
500 – 999	29
More than 1000	11

Source: Dodge County Feedlot Registration Inventory

Figure 18: Dodge County Feedlot and Activity Summary

	Total # in county	Total # in priority areas
Feedlots under 300 A.U. that have been registered	453	131
Producers who should be enrolled in the OLA because the feedlot poses a problem (that is, the runoff could reach surface water)	120	90
OLA's which have been signed	68	55
OLA plans developed for complete fixes (100% runoff reduction)	3	3
OLA plans implemented for complete fixes (100% runoff reduction)	3	3
Feedlots that don't need OLA based on site inspection	38	34

1) Manure Management Planning Results (cumulative)

ACTIVITIES	Total # in county	Total # in priority areas
Number of contacts made with producers about manure management	54	42
Number of requests for manure management plans	38	28
Number of approved manure management plans	22	8
Number of animal units covered by manure mgmt. plans	30,200	9,260

Source: Dodge County Feedlot Registration Inventory

Figure 21: Excess Chemical Concentrations at Manure Storage System Sites in MN

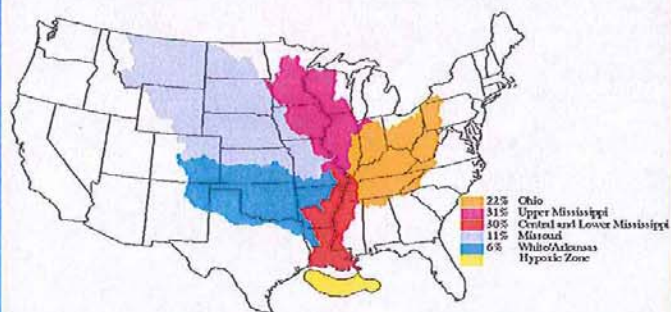
Site	Ammonia mg/L	Chloride mg/L	Total Kjeldahl nitrogen mg/L	Total organic carbon mg/L	Potassium mg/L	Phosphorus mg/L	Flume length feet
Open lots							
O1	2.76	79.4	6.74	27.4	343	0.16	425
O2	0.58	29	0.12	5.1	-	-	> 220
O3	28.4	572	36.3	-	318	0.42	400
O4	0.08	23.3	0.53	1.4	21.4	0.03	> 100
median	1.67	54.2	3.69	1.4	318	0.16	> 300
Undefined							
U1	265	257	374	71.7	179	1.05	> 220
U2	136	203	151	38.2	103	6.37	450
U3	163	81	187	22.1	-	3.01	> 125
median	163	203	187	38.2	141	3.01	> 320
Embroidered							
E1: basin 1	66.1	54.4	76.6	39	52	1.49	275
E1: basin 2	2.24	81.4	4.00	21	197	3.51	400
E2	0.03	52.2	0.26	1.9	-4.3	-0.09	325
E3	4.45	3.9	5.69	0.80	2.0	1.26	300
median	3.85	53.6	4.55	12.5	27	1.38	313
Concrete-lined							
C1: basin 1	0.04	-48.8	0.00	1.0	2.50	0.14	50
C1: basin 2	0.01	5.2	0.69	7.0	39.5	2.4	125
C2	-0.54	-13.4	15.0	135	141	6.9	100
median	0.04	-13.4	0.69	7.0	39.5	2.4	100

Table 36: Excess chemical concentrations at sites with manure storage systems older than five years.

Source: MPCA 2001

Figure 22: The Upper Midwest Contributes 1/3 of the Nitrogen to the Gulf of Mexico

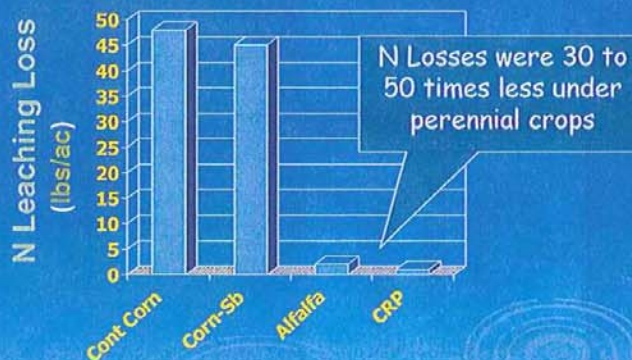
Percentage of the Mississippi River Total Nitrogen Flux to the Gulf of Mexico from Interior Basins



Source: Mulla and Randal, University of Minnesota

Figure 25: Water Quality Benefits of Forages/CRP

4-Year Averages-Minnesota



Source: Montgomery - MN Dept. of Agriculture

Figure 26: Streams Impaired with Fecal Coliform in SE Minnesota

Total Watershed Contribution for All Fecal Coliform Impaired Reaches

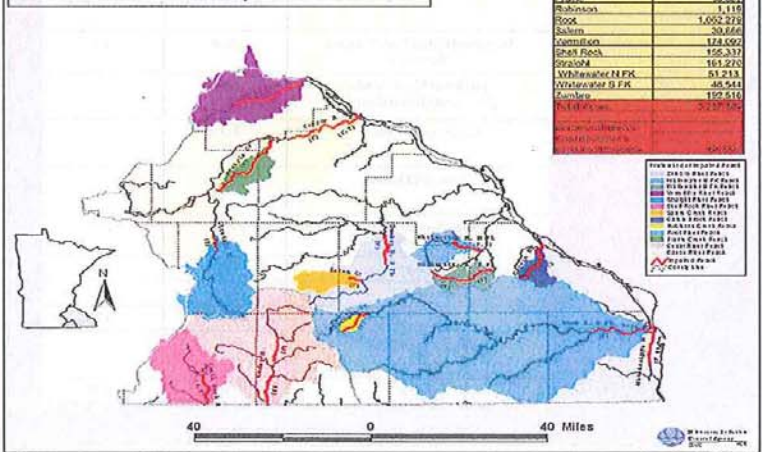


Figure 29: Dodge County - Phosphorous Exported per Land Use

Land Use	Acres	Export Rate (lbs/a-cre/year)	Total Export (lbs/year)	Phos. % by Land Use
Cultivated Land	239,758	0.35	110,289	94.1
Farmstead & Rural Residents	5150	0.46	2369	2.0
Forest	14,616	0.1	1462	1.2
Grass & Shrub	15,368	0.1	1537	1.3
Mining & Exposed Rock	139	0.1	14	<0.1
Rural Developments	696	0.47	327	0.3
Urban & Industrial	2505	0.45	1127	1.0
Water & Wetlands	195	0.1	20	<0.1
TOTALS	278,427		117,145	

Source: MPCA 2004

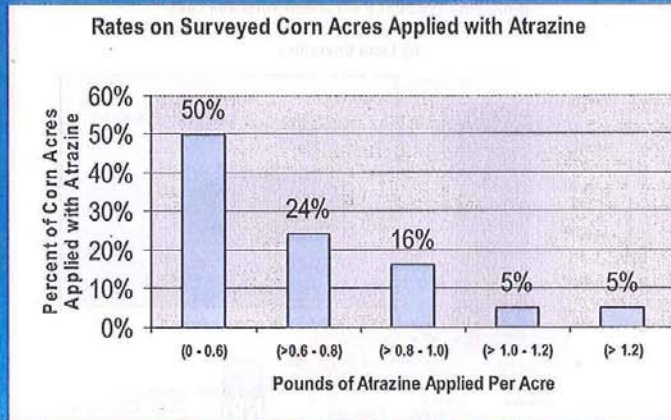
Figure 30: Nonpoint Sources* of Phosphorus to Surface Waters in Southeast Minnesota in Average Flow Year

- Stream Bank Erosion 47%
- Cropland and Pasture Runoff 36%
- Urban Runoff 5%
- Individual Sewage Treatment 4%
- Atmospheric Deposition 3%
- Feedlots 3%
- Other 2%

* Represent 72% of Total Contributions

Source: MPCA 2004

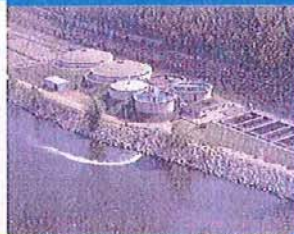
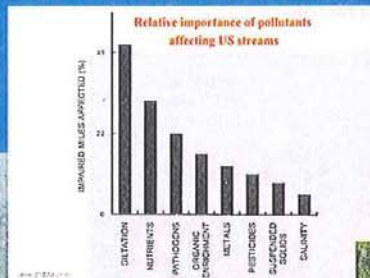
Figure 33: Atrazine rate (Active Ingredient) Distribution Across Surveyed Corn Acres (113,000 Acres in MN)



Montgomery - MN Dept of Ag

Figure 34: Relative Importance of Pollutants Affecting U.S. Streams

Sediment in streams – the number 1 pollutant.



Source: USEPA 1990

Figure 37: Minnesota Soil Erosion Rates, 1982 - 1997

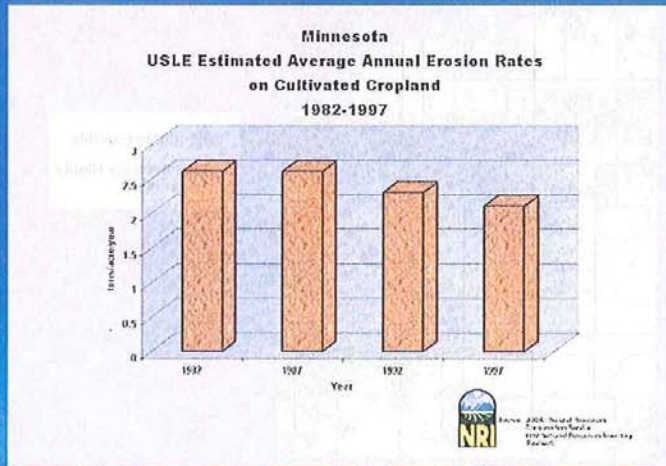


Fig. 38: Effect of Post-Planting Cover on Soil Loss

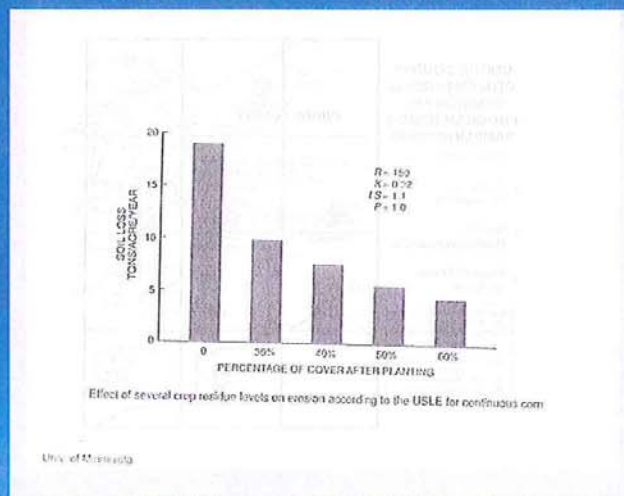
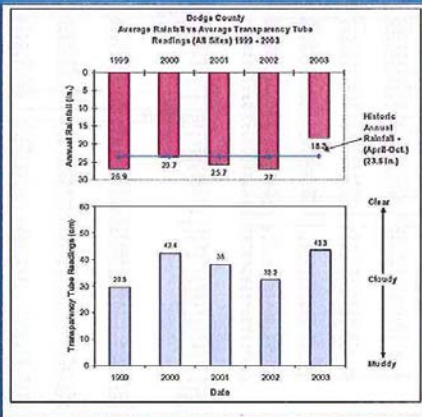


Figure 41: Average Transparency Tube Measurements in Dodge County's Citizen Stream Monitoring Program



Source: Dodge County Citizen Stream Monitoring Program

Figure 42: Conservation Lands Summary

[illegible]

Source: MN Board of Water & Soil Resources

Figure 45: Dodge County Zoning Map with Natural Resource Value

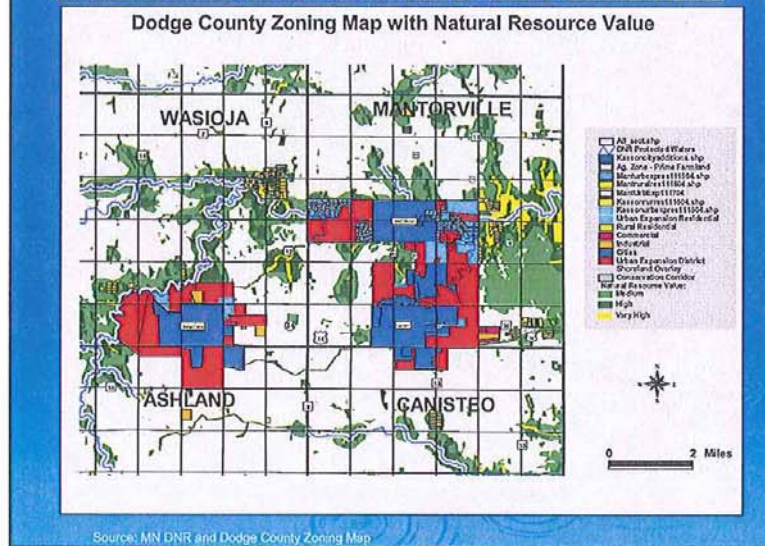


Figure 46: Projected Population Growth and Urban Expansion Area Usage

Dodge County – Projected Population Growth					
	2004 Pop.	2010	2020	2025	2030
Cities (2.7%/yr)	7641	8207	9247	9815	10,418
Township (1.2%/yr)	11,714	13,744	17,940	20,496	23,417
Acres of Existing Urban Expansion Area Required * (Out of 5022 Available Acres)					
Cities		568	1743	2459	3277
Township		277	783	1063	1358
Total Required		845	2526	3522	4635
Acreage Required per Person: Urban Expansion Residential – 1 person/.65 acre; City – 1 person / .15 acre; Rural Residential – 1 person/1.3 acres					

* Calculations based on 2000-2004 population data, and assumes that 75% of township growth will occur in the urban expansion area, while 100% of city growth will occur within city limits. Assumes 2.3 persons per household. Source: Projections based on data from the MN State Demographic Office.

Figure 49: Dodge County Flood Events Since 1998

7 FLOOD event(s) were reported in Dodge County, Minnesota between 01/01/1950 and 10/31/2005.

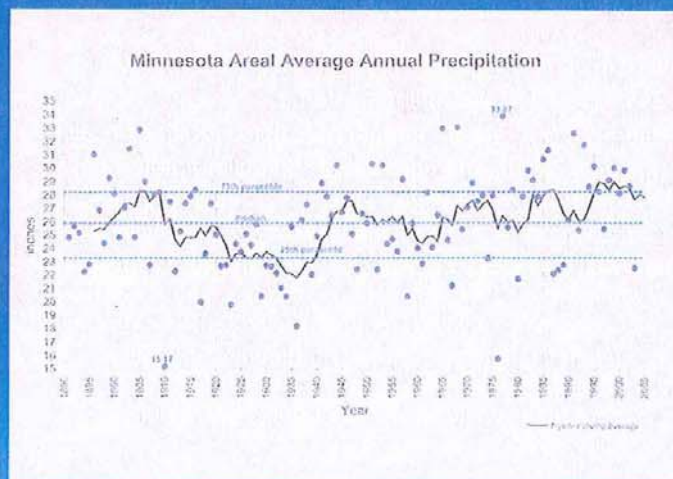
Click on Location or County to display Details.

Mag: Magnitude
Dth: Deaths
Inj: Injuries
PrD: Property Damage
CrD: Crop Damage

Minnesota									
Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD	
1 Hayfield	06/27/1998	06:15 PM	Flash Flood	N/A	0	0	120K	60K	
2 South Portion	07/09/2000	09:20 AM	Flash Flood	N/A	0	0	25K	20K	
3 Countywide	07/10/2000	12:33 AM	Flash Flood	N/A	0	0	65K	85K	
4 Countywide	04/11/2001	07:15 AM	Flash Flood	N/A	0	0	2K	0	
5 North Portion	06/13/2001	06:20 AM	Flash Flood	N/A	0	0	3K	4K	
6 Countywide	09/14/2004	08:58 PM	Flash Flood	N/A	0	0	10K	15K	
7 MNZ086>087 - 094>095	09/15/2004	04:00 AM	Flood	N/A	1	0	1.2M	65K	
TOTALS:					1	0	1.454M	249K	

Source: Minnesota State Climatological Network

Figure 50: Annual Precipitation in Minnesota



Source: Minnesota State Climatological Network

Figure 53: Annual Septic System Activity in Dodge County

Total system Data All Years	Average/Yr
Trench	43
Mounds	24
At Grade	1
Holding Tank	2
Community Shared	3
Other Systems	1
New Systems	47
Repair	26

There have been 14 complaint investigations. At this time there are no outstanding complaints. All systems have been replaced.

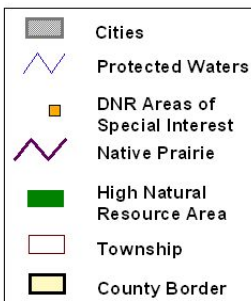
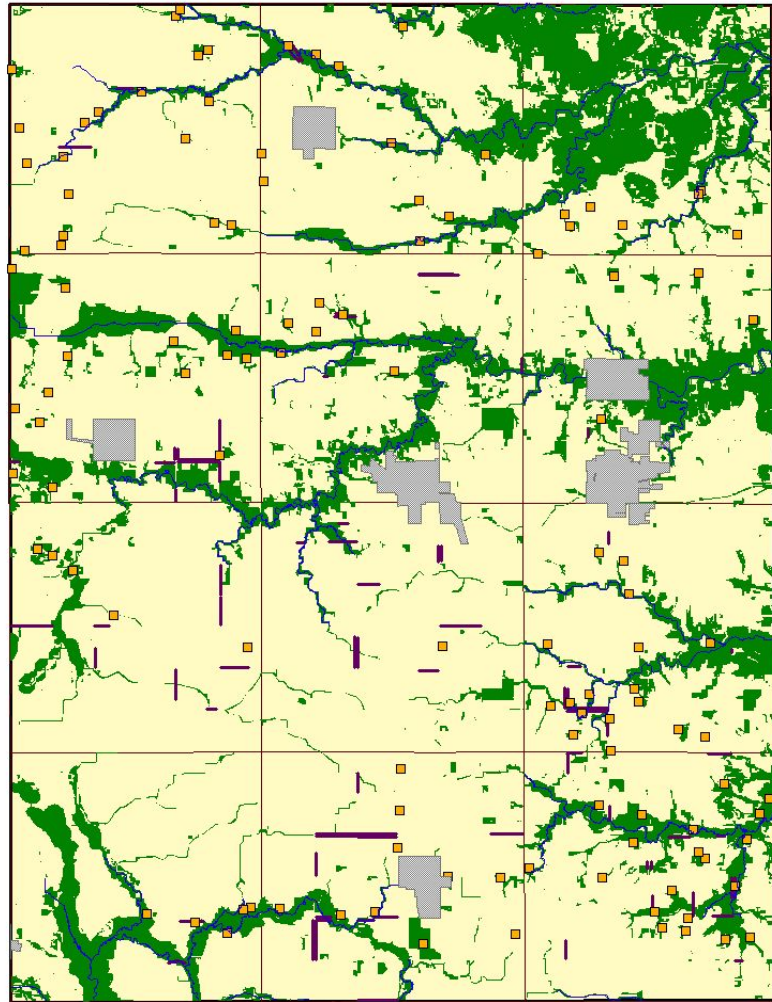
Source: Dodge County Environmental Quality Office - Septic System Records, 1993 - 2005

APPENDIX C

APPENDIX C
PAGE 1

Dodge County - "Special Project Areas" for Protection of Existing Natural Areas (1)

Prepared by Dodge County
Environmental Services Dept.



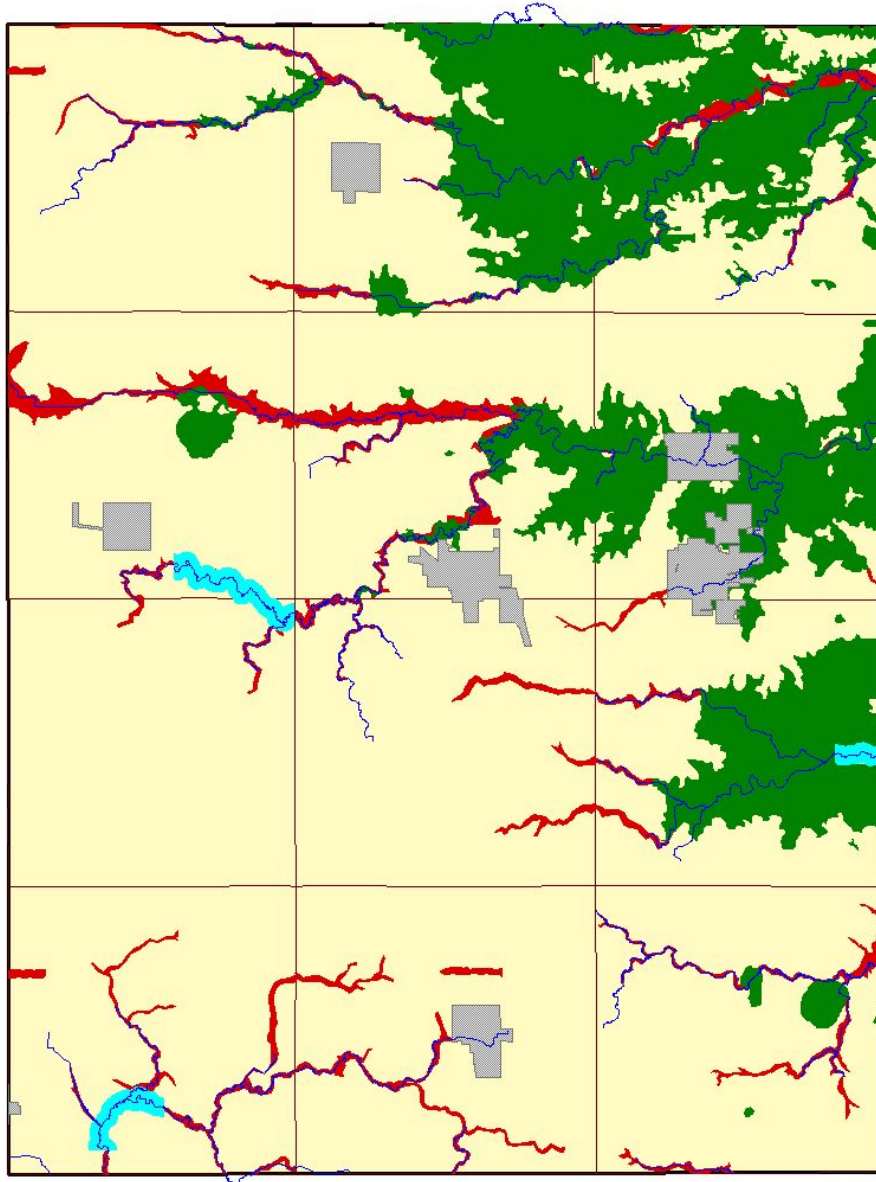
DNR Areas of Special Interest are identified by DNR field personnel as sites meriting special attention. Roadside native prairies were identified by DNR personnel. High Natural Resource Areas represent highly-valued areas which have multiple beneficial characteristics, including vegetative diversity, wildlife corridors, and water protection.



Information may be incorrect and maps may be inaccurate up to several hundred feet. They are to be used for broad examination of site conditions.

Dodge County - "Special Project Areas" for Protection of Existing Natural Areas (2)

Prepared by Dodge County
Environmental Services Dept.



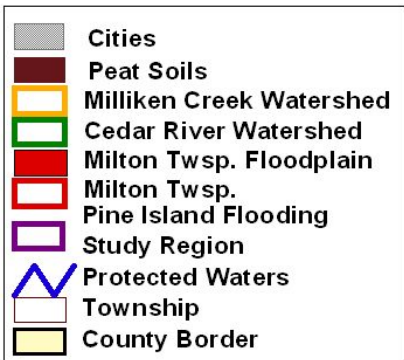
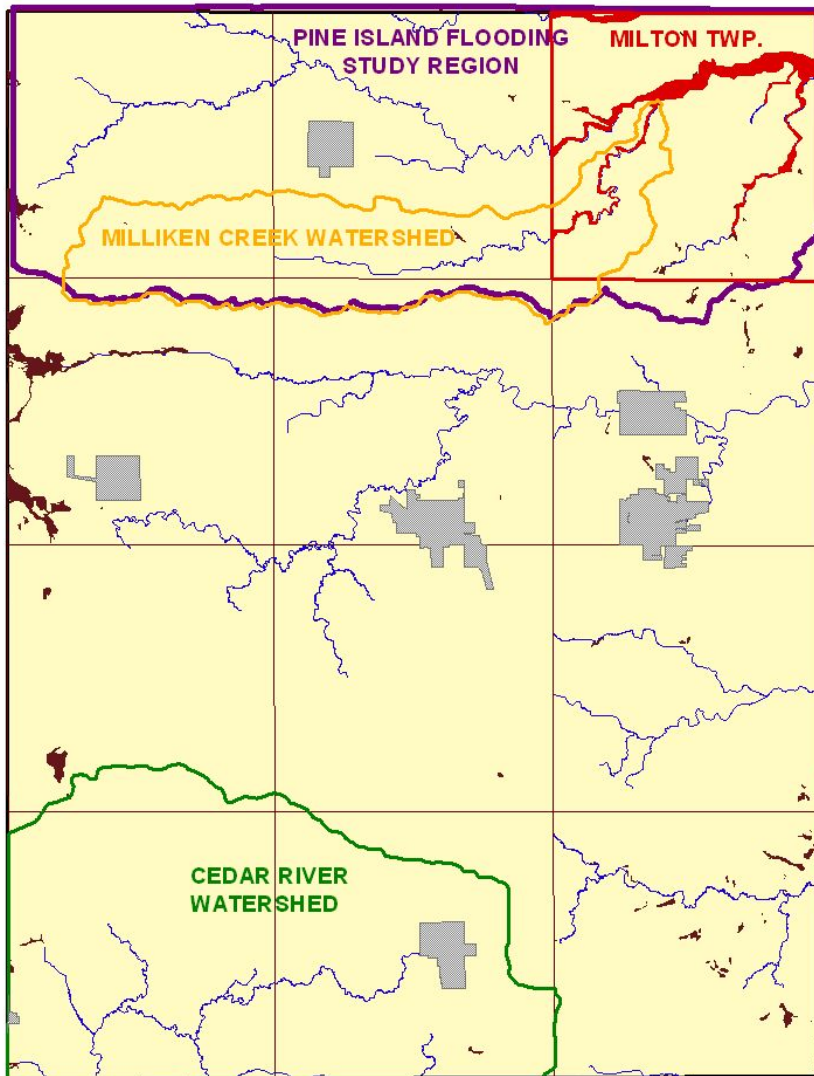
Regions of the county which are < 50 ft. to bedrock show a high correlation to elevated nitrate well test results, and are highly susceptible to other surface contaminants. Conservation corridors and flood plain represent sensitive regions where landuse needs to be carefully evaluated.



Information may be incorrect and maps may be inaccurate up to several hundred feet. They are to be used for broad examination of site conditions.

Dodge County - "Special Project Areas" for Restoration and Protection of Existing Natural Areas (1)

Prepared by Dodge County
Environmental Services Dept.



The Pine Island Flooding Study Region encompasses the top 3 townships, which drain through the city of Pine Island, and which has experienced frequent devastation from flood waters. These same flood waters have caused much flood and property damage in the flood plains of Milton Township. The Cedar River Watershed provides an excellent opportunity for partnerships with the Cedar River Watershed District in protection and restoration efforts. Limited historical data from Milliken Creek (high nitrates, poor macroinvertebrate IBI, limited transparency) make this watershed an excellent candidate for future studies.



Information may be incorrect and maps may be inaccurate up to several hundred feet. They are to be used for broad examination of site conditions.

APPENDIX D

Minnesota Board of Water and Soil Resources Performance Review and Assistance Program

Level II Performance Review Report for Dodge County Local Water Management

--Final Report--

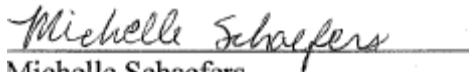
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PRAP

Performance Review and Assistance Program

2009 Level II Review:

Dodge County Local Water Management (*Dodge County*)

Why BWSR did this review

BWSR conducts Level II performance reviews to help local government water management entities to be the best they can be in plan implementation and overall operational effectiveness. In 2009 BWSR conducted Level II performance reviews of nine different local water management entities.

BWSR has conducted a routine Level II performance review of the **Dodge County Environmental Services Department** because they are near the midpoint in implementing their 10-year watershed management plan.

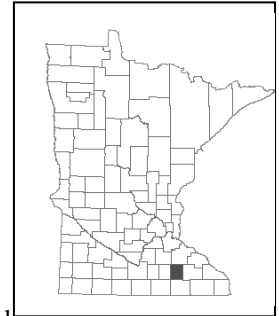
This document includes findings and recommendations to enhance the overall operation and effectiveness of the county's local water management. The county is responsible for taking any actions they deem necessary in response to this report.

Dodge County

Environmental Services Local Water Management Summary of Performance Review Results

What BWSR Found

The Dodge County Environmental Services Department is making good progress in implementing the core activities of its local water management plan. Moreover, the county has been able to pursue and apply resources to make progress on a majority of the accessory activities in the plan.



The county staff has taken a leadership position in the delivery of water management and land conservation services in Dodge County. They can point to successes in their engagement with citizens and landowners in the water monitoring program, expansion of capacity in their feedlot program, in expanded zoning authority, and in general environmental education. The county has also demonstrated the ability to work collaboratively with other local government entities to accomplish planned objectives.

The Dodge County Environmental Services Office is commended for meeting these high performance operational standards.

- ★ Annual plan priorities based on water quality trend data
- ★ Data are collected to track outcomes for priority concerns
- ★ Water quality trends tracked for priority water bodies
- ★ Obtained stakeholder input within last 5 years
- ★ Partnerships with SWCDs/watershed district on projects
- ★ Track outcomes for public education objectives
- ★ Local water plan is linked on the county website
- ★ Water management ordinances on the county website

BWSR recommends that the county consider an annual reporting mechanism that ties accomplishments to planned objectives.

The county submitted comments to correct information that was contained in the draft of this report.

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Purpose, Scope and Contents

This is an information document prepared by the staff of the Board of Water and Soil Resources (BWSR) for the Dodge County Environmental Services Department, and the general public. The information in this document reports the results of a routine performance review of the county's local water management plan implementation and is intended to give the county constructive feedback they can use to capitalize on strengths and address any areas needing improvement. While the performance review reported herein has been conducted under the authority granted to BWSR by Minnesota Statutes Chapter 103B.102, this is a staff report and it has not been reviewed or approved by the BWSR board members.

Purpose

The purpose of this Level II performance review is to determine the progress of Dodge County in accomplishing the goals and objectives of the local water management plan and to assess the county's overall performance with respect to general performance standards for local water management planning and implementation.

In addition, our review provides suggestions for additional actions or assistance that the county may consider and implement.

BWSR conducted a limited application of the Level II PRAP process in 2009. BWSR will continue to refine the process based on the results of this year's performance reviews.

Scope

This PRAP review included information gathering, analysis and reporting. Specific actions taken by BWSR in this process have included: review of the county's compliance with the PRAP Level I and II performance standards as reported by county staff, BWSR staff attendance at a joint meeting of the county environmental services staff and the soil and water conservation district supervisors and staff to explain the PRAP process and monitor the group's discussion of plan implementation issues (PRAP Level II Part 3), and review of the county's 2003-2007 eLINK reports to BWSR.

The PRAP process is administered by BWSR for the purposes of performance improvement and assistance. It is neither a financial audit nor investigation and it does not replace or supersede other types of governmental review of local government unit operations.

Contents

This report contains the following sections:

- Background
- Purpose
- Scope
- Findings and Discussion (Parts 1-3)
- Conclusions
- Recommendations
- LGU Response
- Appendices

PRAP Background

In January 2008 the Minnesota Board of Water and Soil Resources (BWSR) adopted a strategic plan with a mission statement to *improve and protect Minnesota's water and soil resources by working in partnership with local organizations and private landowners*. The

strategic plan recognizes the essential role of the system of local governments, such as counties, in delivering the programs and projects that will accomplish this mission.

One approach to making that local delivery system the best it can be is BWSR's implementation of a program authorized by the 2007 Minnesota legislature. Called the Performance Review and Assistance Program (PRAP), its purpose is to periodically review and assess the performance of local units of government that have land conservation and water management responsibilities. These include soil and water conservation districts, watershed districts, watershed management organizations, and the local water planning function of counties. BWSR has developed four levels of review and assistance, from routine to specialized, depending on the program mandates and the needs of the local governmental unit.¹

A Level I review annually tabulates the local governmental unit's compliance with basic organizational requirements. In Level II, conducted by BWSR once every five years for each local government unit, the focus is on the degree to which the organization is accomplishing its management plan. A Level II review includes determination of compliance with BWSR's Level I and II statewide performance standards, a tabulation of progress on planned goals and objectives, a discussion among those responsible for the county's local water plan of the factors affecting plan implementation, and a BWSR staff report to the organization with findings, conclusions and recommendations. BWSR's actions in Levels III and IV include elements of Levels I and II and then emphasize assistance to address the local governmental unit's specific needs.

The review of the Dodge County local water management is one of nine Level II performance reviews that BWSR has conducted in 2009. This document reports the results of that review.

Findings and Discussion

This section describes what BWSR learned about Dodge County's provision of local water management services.

Part 1: Reporting Progress on Local Water Plan Implementation

Part 1 of the PRAP performance review asks the local governmental unit, in this case the Dodge County Environmental Services Department, to report accomplishments made to date on each of the action items from their local water management plan. BWSR provides a form for this purpose which the county may use. They have the option of substituting an existing document that contains information comparable to that asked for on the form. In this case, the county submitted a copy of the local water management plan with interlinear descriptions of accomplishments as a substitute for the Part 1 form. (See Appendix A.) This part of the performance review is based on the information in that document.

Dodge County's local water management plan was adopted in September 2006. The plan serves as both the local water management plan for the county and as the comprehensive water management plan for the Dodge Soil and Water Conservation District (SWCD). The plan identifies two categories of action items that the county will implement to accomplish the objectives listed in the plan. One category contains *core activities* that are pursued with existing staff and budget assuming continuation of their grant amount. The second category lists *accessory activities* that would be addressed if the county is able to obtain additional technical and financial assistance.

The plan contains 26 core activities and 37 accessory activities for which the county has or

¹ For more information about BWSR's Performance Review and Assistance Program see the 2009 Report to the Legislature at <http://www.bwsr.state.mn.us/PRAP/index.html>

shares primary responsibility. Since plan adoption, the county has started, partially completed, or fully completed 25 (96 percent) of the core activities and 25 (68 percent) of the accessory activities. The accomplishments related to the accessory activities are particularly noteworthy, given that these activities could be considered over-and-above the routine water resource management capacity of the county and its partners.

Part 2: Charting Performance Against Standards

This part of the performance review measures the county's compliance with a set of performance standards that BWSR has identified for all county local water management entities. The standards are designed to be indicative of the overall performance of this activity within county government. There are three types of standards: **basic** (which all counties would be expected to meet), **high** (which list advanced practices that not all counties are expected to meet), and **quantitative** (which are designed to identify level of effort or quantity of outputs). The standards indicate performance in four general areas of operation: administration, planning, execution, and communication and coordination. The results for Dodge County's local water management activities are shown in Appendix B.

The county meets all five of the basic non-quantitative standards and 8 of the 10 non-quantitative high performance standards that apply to their local water management activities. The quantitative standards indicate a reasonable level of performance in executing the local water management plan. The two high performance standards that the county does not meet are for reporting plan implementation progress to the water plan task force and having completed drainage records modernization.

Part 3: Identifying Success and Confronting Challenges

Information for this part of the review was generated at a special workshop attended by staff from the Dodge County Environmental Services Department and by the Dodge SWCD supervisors and staff on July 28, 2009 at the agricultural services center in Dodge Center. The participants were invited to discuss answers to questions developed by BWSR addressing successes, challenges, threats, opportunities and needs related to implementation of the action items listed in the local water management plan. The meeting was chaired by the Environmental Services Director and was monitored by three BWSR staff. A copy of the questions addressed by the workshop participants is included in Appendix C.

Dodge County staff cited several plan objectives for which they have had the most success in implementation. These include their water testing program, public education about water quality, the farm nutrient management program and agricultural BMP applications, and the adoption of zoning and shoreland regulations. They have a good partnership with the Southeast Minnesota Water Resources Board and good support from their own county board. The county has had the most difficulty making progress on sign-ups for set aside programs and runoff management.

In listing factors, both positive and negative, that have affected plan implementation, the county identified:

- lack of funds (negative)
- staff (positive)
- length of easements (negative)
- complicated paperwork for some programs (negative)
- partnerships, especially with water quality volunteers (positive).

The county sees the formation of the new Cedar River Watershed District as providing an opportunity for more partnership efforts in program delivery.

The county expressed the need for assistance with grant program opportunities, both learning about opportunities and writing grant applications. County staff would like the opportunity to learn from and collaborate with other county water planners and suggested that BWSR include a session for these people at the upcoming training academy.

Other Findings

The county has been meeting monthly with their partners to discuss strategies related to both program delivery and being in position to take advantage of funding opportunities. One outcome from this effort is that the county has recently collaborated with the SWCD to create a part-time manager position for the SWCD.

Conclusions: Action Items and Commendations

This section contains BWSR's conclusions about the performance of Dodge County's local water management activities and lists any action items or commendations.

The Dodge County Environmental Services Department is making good progress in implementing the core activities of its local water management plan. Moreover, the county has been able to pursue and apply resources to make progress on a majority of the accessory activities in the plan.

The county staff has taken a leadership position in the delivery of water management and land conservation services in Dodge County. They can point to successes in their engagement with citizens and landowners in the water monitoring program, expansion of capacity in their feedlot program, in expanded zoning authority, and in general environmental education. The county has also demonstrated the ability to work collaboratively with other local government entities to accomplish planned objectives.

Action Items

There are no action items (immediate steps needed to correct operational deficiencies) for Dodge County.

Commendations

The Dodge County Environmental Services Office is commended for meeting these high performance operational standards.

- ★ Annual plan priorities based on water quality trend data
- ★ Data are collected to track outcomes for priority concerns
- ★ Water quality trends tracked for priority water bodies
- ★ Obtained stakeholder input within last 5 years
- ★ Partnerships with SWCDs/watershed district on projects
- ★ Track outcomes for public education objectives
- ★ Local water plan is linked on the county website
- ★ Water management ordinances on the county website

Recommendations

The following recommendation is based on BWSR's evaluation of the performance of the Dodge County Environmental Services Department as described above. This recommendation is offered to the county staff for their consideration as an enhancement to the organization's service to the stakeholders of the county and its pursuit of effective water and related land resource management.

Recommendation 1. Report annually on plan implementation progress.

Develop a routine annual reporting mechanism that ties accomplishments to plan objectives and either core or accessory activities. These reports will facilitate tracking progress on plan implementation and provide a means to keep the water plan task force and county board members apprised of progress.

LGU Response

The Dodge County Environmental Services director submitted the following comments in an

e-mail response to the draft of this report.

Dodge County Comment:

The only comment I have regarding the report is a clarification of the last sentence on page 5. The statement about the feedlot problem leading to the hiring of a feedlot compliance officer is not accurate; please delete that portion of the sentence. The last part of the sentence could remain as it is accurate to that the Cedar River Watershed District provides an opportunity [for more partnership efforts in program delivery].

Thanks again for coming down to Dodge and providing your review and recommendations.

BWSR Response: *The sentence on page 5 has been corrected.*

A staff member of the Dodge Soil and Water Conservation District, who serves as the county ditch inspector, submitted the following information about the county ditch records in response to the performance standard item regarding drainage records modernization on the checklist in appendix B of this report.

Dodge County Comment:

You wanted me to send you this regarding the county ditch records. As I stated at the meeting our public drainage records do not meet the modernization guidelines. I have a lot of new stuff in the computer system but all the old stuff is all over the courthouse. That's over at the courthouse in Mantorville but scattered all throughout the courthouse, not in one place. After going to the ditch meeting for applying for the modernizing of records grant, I had no clue on how to write the grant proposal and for how much. I didn't receive any guidance other than contact someone that has done it. The same old pass the buck.

We are in the process of doing redetermination of benefits on all of our county drainage systems, a few each year. Someday, I would like to see our records modernized.

BWSR Response: *Comment noted. The item in Appendix B, Performance Standards, regarding drainage records modernization has been corrected to reflect this information. The sections of the report pertaining to the drainage records modernization performance standard have also been changed.*

Appendices

- A. PRAP Plan Implementation Progress Report (Part 1)**
- B. PRAP County Local Water Management Performance Standards form (Part 2)**
- C. PRAP Discussion Questions (Part 3)**

Appendix A. PRAP Plan Implementation Progress Report (Part 1)

Adopted 9/12/06

Dodge County Comprehensive Water Management Plan 2006-2016

Activities completed as of July 2009 are identified in colored font below.

Executive Summary

Purpose of the Water Management Plan: Provide a framework and guideline for implementing actions that address priority concerns.

Priority Concerns Addressed in Plan (see Appendix A for Scoping Document):

1. Fertilizers and herbicides from agricultural fields seeping into drinking water
2. Nutrients and chemicals from animal feedlots flowing into rivers and streams
3. Nutrients and chemicals from animal feedlots seeping into drinking water
4. Soil, fertilizers and herbicides from agricultural fields flowing into rivers and streams
5. Loss of natural vegetation and habitat due to urban and rural development
6. Flash flooding or the quick rise and fall of water and stormwater management.
7. Inadequate individual septic systems, municipal sewers, and community systems that drain to field tile, wetlands, streams or rivers.

Water Management Goals: Safe drinking water in all aquifers and pollutant loads in protected waters below state and federal standards including Total Maximum Daily Limits.

Summary of Implementation Actions: “Core Activities” will be completed assuming that the current budget of \$166,000 is available annually with adjustments for inflation. Core activities include enforcement of wetland, feedlot, shoreland, septic system, waste management, and related zoning regulations. Core activities also include on-going water testing programs designed to accurately judge conditions and trends in drinking water and rivers. A basic level of education, technical assistance, and financial assistance will be offered regularly.

“Accessory Activities” can be completed only if new sources of technical or financial assistance become available to the county. Examples of accessory activities include: purchase of aerial photographs, long-term groundwater and surface water monitoring stations, proactive education to promote agricultural best management practices, grants to restore wetlands, and implementation of South Zumbro Watershed Storm Water Capital Improvement Plan.

Consistency with Other Plans: The Water Management Plan is consistent with other local, state, and regional plans and controls. Implementation actions include efforts to work with municipalities to maintain consistency with the County’s plans and controls.

Priority Concerns, Goals and Objectives:

Priority Concerns Addressed in Plan (see Appendix A, Scoping Document):

1. Fertilizers and herbicides from agricultural fields seeping into drinking water
2. Nutrients and chemicals from animal feedlots flowing into rivers and streams
3. Nutrients and chemicals from animal feedlots seeping into drinking water
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7. Inadequate individual septic systems, municipal sewers, and community systems that drain to field tile, wetlands, streams or rivers.

Assessment of Priority Concerns (see Appendix B)

Water Management Goals: Safe drinking water in all aquifers and pollutant loads in protected waters below state and federal standards including Total Maximum Daily Limits.

Water Management Plan Objectives:

1. Track water quality trends in local drinking water aquifers and Public Waters.
2. All landowners have easy access to information about land uses and natural resources on their property.
3. All youth will have opportunity to learn about the connection between land use and water quality.
4. All landowners, governments, and businesses comply with applicable regulations.
5. All Farms prepare and follow their Nutrient Management Plan.
6. All Farms follow MN Dept of Agriculture's Best Management Practices for pesticide and herbicide use.
7. All Public Waters and sensitive resources are protected by permanent vegetative buffers
8. All eligible landowners are aware of benefits and opportunities for the conversion of agricultural land to perennial vegetation and the preservation of natural areas.
9. All landowners with highly erodible land manage their land to soil loss tolerance (2T or 2T Value).
10. Zoning regulations will promote growth near urban areas and encourage cluster development to preserve natural/open areas. (vegetation & habitat corridors)
11. All Municipalities will adopt and enforce DNR's model Shoreland Zoning Regulations
12. All Municipalities will adopt Stormwater Management Plans that address water quality and quantity, and account for projected growth.
13. Reduce runoff, increase water filtration, and depress stream hydrograph on protected waters.
14. All wastewater is properly treated and treatment systems are properly maintained.
15. All Public Water Suppliers develop and implement their Wellhead Protection Plan

Implementation Plan: Priorities, Budget, and Schedule.

Priority Water Resources:

1. With limited local money, groundwater aquifer protection will take priority over surface water protection.
2. With limited local money, protection of the first encountered bedrock aquifer will take priority over lower aquifers.
3. With limited local money, watersheds with documented water quality exceeding state and federal standards will receive priority over watersheds without documented exceedances.

Existing Budget (2006):

1. State Natural Resources Block Grants and County Revenue	\$ Amount
a) Water Management Plan Implementation	\$ 24,000
b) Feedlot Regulation	\$ 63,000
c) Shoreland Regulation	\$ 7,000
d) Wetland Regulation	\$ 37,000
e) Sewage Treatment System Regulation	\$ 35,000
2. Soil and Water Conservation District	\$ Inkind
3. State and Federal Agencies	\$ Inkind
4. Private Contributions	\$ Inkind
5. Environmental Trust Fund	\$100,000
Total	\$ 266,000

This budget has not changed significantly in past 10 years; it primarily covers Core Activities. Accessory

Activities are typically conducted when additional money or labor resources become available through grants, etc....

Core Activities. The following are actions that can be accomplished annually using existing staff and budget assuming that the Natural Resources Block Grant is awarded annually at the current amount with regular inflationary adjustments:

1. Inventory and Mapping (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):
 - a) Annually update data and maps in County's Environmental Atlas. Distribute atlas to elected officials, policy makers, and staff. Within 5 years make atlas available on the County's Web Page. *Dodge County Atlas maps have been updated in May 2009 utilizing 2007 aerial photography. Plan to make atlas available online by 2011.*
 - b) Regularly update County Well Index by field locating newly drilled wells and wells with construction and water quality information. *Dodge County Well Index now contains 2200 wells, and is updated on an ongoing basis. Following a water test, wells, with known depth, are field located with GPS, and entered into the CWI. Well locations are communicated to the MDH office in St. Paul for inclusion into the state-wide database.*
2. Groundwater Monitoring: (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):
 - a) Provide well water testing service to public. Assign lab results to well record in County Well Index. *See 1.b*
 - b) Coordinate a network of citizen volunteers to sample their wells over a long period of time to determine trends. *An established group of 90 wells, county-wide, is beginning the 3rd year of monitoring their household wells for nitrate. About half the wells are in a targeted sub-group, focusing on movement of pollutants within the aquifer. Wells are monitored twice yearly and results are communicated directly to the participant. The project is ongoing.*
3. Surface Water Monitoring: (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):
 - a) Maintain network of volunteer stream monitors to collect turbidity tube measurements and macroinvertebrate samples. *Our ongoing program, in its 10th year, monitors 20-25 sites county-wide and recently added sites in the Cedar River watershed. Turbidity results are communicated annually to the MPCA, and directly to the participants. Macroinvertebrate samples are communicated to the MNDNR, and used to generate local Indices of Biotic Integrity for use in evaluating stream quality. Additional sites will be added as the program progresses.*
 - b) Maintain existing automatic sampling station. *Station has sampled turbidity, DO, temperature, conductivity and stage for past 4 years, and results communicated to the MPCA. Future plans may include additional stations and/or nutrient monitoring at this site.*
4. Education and Technical Assistance: (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):
 - a) Annually summarize drinking water quality conditions per aquifer and report to local elected officials, state agencies, and public. *In 2007, a Powerpoint presentation entitled, "Groundwater & Surface Water Trends in Dodge County" was prepared and presented to County Commissioners, then again at a well-attended public meeting.*
 - b) Annually summarize surface water quality conditions per watershed and report to local elected officials, state agencies, and public. *See 4.a*
 - c) Distribute at least 6 "news releases" per year to all local newspapers. *Generated by office personnel to address pertinent environmental and planning topics. Typically, a dozen, or so, of these news releases are distributed annually to all county newspapers. Septic articles appear in local newspapers on timely issues. i.e. "Freezing Septic Systems", "Property Transfer Rules", "Low Interest Loans for Septics".*

- d) Support SWCD's long-standing annual "conservation lesson" for middle school students. *Lessons, covering 2 days, are presented to all 5th graders in county schools. Topics include soils, land management, and preservation of water quality and quantity. Plans are to continue this effective presentation in the future.*
- e) Annually advertise in local newspaper or through direct mailings, a summary of regulations related to water and waste management. *In newspaper*
- f) Annually advertise in local newspaper or through direct mailings, a summary of local services related to water management including technical and financial assistance. *½ page ad published annually.*
- g) Provide technical assistance upon request for information related to existing regulation and incentive programs. *Ongoing – receive phone calls daily requesting assistance with a variety of water and water related issues*
- h) Create, update, and make available to public; brochures and publications related to water management. *Brochures and pamphlets relating to water quality, derived from the MN Dept. of Health, and MN Dept of Agriculture, are routinely dispersed as part of our technical assistance program.*
- i) Include information on the County's Web Page. *Exists at this time, and is updated as needed.*
- j) Support and encourage enrollment in all land set-aside programs that help implement the objectives of the Water Management Plan including, but not limited to, CRP, CREP, RIM, WRP, CSP, etc.... *Ongoing. As part of the County's vegetative buffer initiative, a total of 208 letters have been sent out since October of 2007. The letters inform landowners of the state and local regulations regarding vegetative buffers as well as promote the many benefits of buffers. Programs such as CRP, CREP, RIM, etc. were identified as ways the landowner could satisfy the buffer requirement, provided that a minimum of 50 feet of land from the top of the bank was enrolled. Landowners who were interested in this option were directed to the Dodge County Agricultural Service Center. In addition, landowners with identified erosion problems were also encouraged to see if these programs or other cost share may be available. Due to confidentiality, the Environmental Services Department does not know how many contacts may have been generated by the letters.*

SWCD provides technical assistance for the installation of soil and water BMP's and as member of the WCA TEP.

SWCD assists landowners in the establishment of native grass plantings through its "No-till Drill Program".

SWCD assists landowners in the establishment of windbreaks and wildlife plantings through its "Tree Program".

SWCD assists the DNR in the monitoring of wells.

SWCD promotes its programs and activities through the use of a bi-annual newsletter, local newspapers and its web site.

SWCD has available to landowners State cost-share funds for the installation and establishment of soil and water BMP'S.

- k) Inform all landowners and contractors of the important functions of wetlands. Also provide information and technical assistance that helps landowners recognize wetlands, how to protect them and how to restore them. *All zoning permit applications are screened for wetland impacts and landowners are notified. All cities received a map showing hydric soils and wetland in and near their city. Annually publish a newspaper ad with notification that wetlands cannot be impacted without permit.*

5. Financial Assistance: *(These activities support all "Priority Concerns" and all "Water Management Plan Objectives"):*

- a) Provide opportunity for landowners to obtain an AgBMP Loan. *Ongoing – County has approved over \$700,000 in revolving loans to over 20 landowners for feedlot improvement, conservation tillage equipment, and septic systems. 2006-Present 15 septic systems have been installed using AgBMP loans.*
- b) Provide opportunity for landowners to obtain a grant from the County's Environmental Trust Fund for actions that are consistent with the objectives of the Water Management Plan. *Interested landowners, and groups, may fill out an application for a grant from the Environmental Trust Fund.*

Proposals are evaluated by the Environmental Quality Office, and presented to the Dodge County Board for approval.

Each school district in the county has received grants for outdoor classroom projects. Grants have also been issued for feedlot improvements and clean-up of old trash dump sites along rivers. 14 existing wells have been sealed using the county's Environmental Trust Fund.

- c) Provide opportunity of well owners to receive a free water testing kit if the well is sensitive to contamination or the well owner is pregnant or has an infant. *Need to advertise this program better in the future. Free kits are also provided to landowners whose well has never before been tested.*

6. Regulation, Ordinance, Planning: *(These activities support all "Priority Concerns" and all "Water Management Plan Objectives"):*

- a) Implement the County's Water Management Plan, Comprehensive Land Use Plan, and Solid Waste Management Plan and enforce related ordinance. Existing regulations include: individual sewage treatment systems, wetlands, shoreland, floodplains, storm water, waste disposal, recycling, feedlots, contaminated soil, and land use (zoning). Current enforcement level is primarily reactionary; triggered by permit requests or by complaints. *Ongoing- but now, active enforcement is a regular part of core activities and not just reactionary. County enforces state septic rule, state feedlot rule, wetland conservation act, state shoreland standards, county zoning, county waste ordinances, and floodplain regulations.*

Dodge County Zoning Ordinance. *As part of Dodge County's zoning permit application, Department staff is required to initial that the site has been reviewed in the office for SSTS, shoreland, floodplain and CUP requirements. Properties are also reviewed for slopes, karst features and hydric soils in the office in order for staff to be familiar with the property prior to the site inspection. Sites are field check for compliance with setbacks. Sites with mapped hydric soils field verified to determine if wetland are present. As a result of the field checks which started in 2008, a total of 17 after-the-fact (ATF) permits violations have been identified. Since March of 2007, 152 ordinance violations have been documented, 89 have been resolved, 24 are working towards resolution.*

Zoning Permits - 2006 – 160 permits issued

2007 - 134 permits issued

2008 - 149 sites inspected and permits issued, 9 ATF

2009 – 61 sites inspected and permits issued, 8 ATF

SSTS - 2007 – 5 violations, 4 resolved, 1 court

2008 – 10 violations, 7 resolved, 2 court, 1 no contact

2009 – 10 violations, 5 resolved, 2 in progress, 3 no contact

Shorelands - *Buffer enforcement, 208 letters sent out since 2007. Of the parcels re-checked, 100 landowners are currently in compliance. 87 parcels have not been checked yet; however, 57 of the 87 landowners had contacted this office indicating that they would be complying. 21 are not in compliance as of today's date.*

Feedlots - *2008 – 28 compliance inspection on feedlots registered between 300 AU and 1000 AU were conducted. 22 were found to be in compliance, 5 are currently working with CFO to address identified issues. 1 was referred to MPCA for action.*

2009 – 20 compliance inspections performed. 13 found to be in compliance, 7 are currently working with CFO to address identified issues.

Stormwater - *2 violations identified – No construction stormwater permit was issued.- Both resolved. 2 stormwater complaints, both were Feedlot NPDES sites and referred to the state.*

Floodplain - *All unincorporated areas of Dodge County are mapped as Unnumbered "A" Zone. The Department created more detailed floodplain maps utilizing GIS with USGS topographic overlays and bridge hydraulic data to assist in administration of the Floodplain Overlay District. These maps will again be updated/revised by the Zoning Administrator (winter 2009-2010) using LiDAR and*

programs/methods from the DNR's Floodplain Mapping Hydrologists.

- b) Regularly update plans and ordinances. *Ongoing- County has 3 active advisory committees dedicated to review of land use trends, zoning regulations, and water management issues. 2008 – County Waste Designation Ordinance passed. A new Septic Ordinance was passed in May, 2006 which includes the provision for inspection of existing septic systems during property transfer and when adding square footage to a home over 120 sq ft. To comply with new state rules the existing septic ordinance will be rewritten to be effective February, 2010*
2006 – Minor amendments pertaining to home occupations and administration.
2009 - Updated ordinance feedlot setbacks and reciprocal setbacks to comply with state law.
2009 - Wind Ordinance is currently being re-written. One public hearing has been conducted.
2010- Comprehensive Zoning re-write is planned.
- c) Propose a county-wide policy that defines the county's position and responsibility for stormwater flow management in the context of an entire watershed. In other words, define what the county's role is in reducing impacts of flash floods and sedimentation affecting downstream neighbors.
- d) As time allows, assist local governments implement similar regulations. *Ongoing – county is actively engaged with townships to jointly administer land use regulations. County has also been actively engaged with cities in enforcement of zoning, wetland, and waste regulations.*

7. Administration and Coordination: *(These activities support all "Priority Concerns" and all "Water Management Plan Objectives"):*

- a) The County will carry-out the Local Water Management Plan including annual activity planning, staffing, contracting, and reporting. *Ongoing*
- b) The County will collaborate with partners to reach shared goals and objectives. Partners include Federal Agencies, State Agencies, Soil and Water Conservation District, Local Governments, Joint Powers Boards, not for profit organizations, businesses, and individuals. When possible the County will jointly work on "accessory activities" as outlined below: *Ongoing- County Water Plan Advisory Committee has met 3 times in 2009. Staff from county, SWCD, and NRCS has been meeting monthly. County is a member of SE MN Water Resources Board and participates in multi-county projects. County often attends meetings and collaborates with Zumbro River Watershed Partnership, Cedar River Watershed District, and Basin Alliance for Lower Mississippi in Minnesota*

City of Mantorville – Mantor Drive

Dodge County is currently working with the City of Mantorville, City Engineer, and the South East MN Water Resource Board (SEMWRB) Coordinator to obtain funding to update 20 existing on site septic systems. The project has been placed on the funding list for grants and a TMDL application has been completed. The homes will be connected to the City of Mantorville via a pressurized sewer pumping the wastewater to the existing City of Mantorville Wastewater Treatment Plant.

City of Mantorville –Northwest Project

Dodge County worked with the City of Mantorville and the SEMWRB Coordinator on extending sewer and water to 41 homes and 15 lots (56 properties) in the northwest part of the City. Negotiations began in 2004 and the first properties were hooked up to the City in 2005. 48 properties have been hooked up to the city at the present time.

Co Hwy 34 Project – Rural Properties in Mantorville Township

Dodge County worked with the SEMWRB Coordinator and the City of Kasson to begin the annexation process for 23 properties on Co Rd 34. Meetings began at City Hall in 2006. After several meetings the properties were split on annexation and the process to locate new existing systems on their existing lots was initiated. Property owners received some grants for the design of existing systems and sealing existing wells. The project was completed in 2008 with 12 properties installing new septic systems, 14 existing wells were sealed, and 2 new community wells were constructed. This project updated septs and improved water quality because several of the existing wells had very high nitrates.

Accessory Activities: Successful implementation of the following actions is largely dependent on

new sources of technical and financial assistance. The county will pursue private, non-profit, and government partners to share in the cost and implementation of accessory activities including:

1. Inventory and Mapping: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Obtain annual aerial photographs at a scale that will improve accuracy of inventories and improve ability to educate public, provide technical assistance and enforce regulations. *2007 pictometry and 2009 LIDAR Planning (with participation from other Dodge County Departments) intends to include annual aerial photographs as part of its annual budget.*
 - b) Make Environmental Atlas an interactive product on internet that allows user to overlay multiple themes and analyze data. *Currently in the planning and development stages with a goal of being online in 2011.*
 - c) Seek out and actively participate in research studies which seek to clarify information relating to pollutant transport, ground water sensitivity, surface water conditions and health risk. *SEMWRB volunteer nitrate monitoring project 2006-2009*
 - d) Map and Inventory condition of existing buffers on Protected Waters. *Completed 2007-2009 - Condition of vegetative buffers on protected waters was mapped utilizing 2007 aerial photographs (pictometry) and field verified. Field inspections have been conducted spring and fall of 2008 and summer 2009. As annual row crops within the shore impact zone comprise the greatest number of violations, field inspections will need to be performed yearly in the absence of new imagery.*
 - e) Update Feedlot Inventory. *Ongoing – maintain an inventory with registration information for about 400 feedlots*
 - f) Inventory of unique, rare and endangered natural habitat. DNR has inventoried important aggregate and crushed rock resources. *County and DNR have worked together to identify native prairie in road ditches and have installed signs identifying prairie locations. DNR and county have worked together to develop a GIS data layer showing important natural habitats in the county. Dodge county has updated soil survey available on web.*
 - g) Compile flood damage information. *From 2007 flood*
 - h) Identify primary sources of soil erosion at a sub watershed scale and calculate amount of soil lost to streams.
2. Groundwater Monitoring: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Regularly obtain (and pay for) groundwater samples from a network of drinking water wells to provide baseline and long-term trends of water quality in primary aquifers. *An established group of 90 wells, county-wide, is beginning the 3rd year of monitoring their household wells for nitrate. The project is ongoing.*
 - b) Seek out and actively participate in research studies which seek to clarify information relating to pollutant transport, ground water sensitivity, and health risk. *SEMWRB volunteer nitrate monitoring project 2006-2009*
 - c) Gain more information about potential risks from manure storage basins; earthen and concrete construction.
 - d) Study soil sampling protocol to help define opportunities for improving use of soil testing data by landowners.
3. Surface Water Monitoring: (*These activities support all “Priority Concerns” and all “Water Management Plan Objectives”*):
 - a) Continue to monitor Salem Creek (impaired water) for fecal coliform bacteria and assist landowners in evaluating options to reduce fecal contributions including feedlot runoff, manure land spreading, and septic systems.
 - b) Expand the number volunteer stream monitors to accurately judge conditions of all sub watersheds. *Our ongoing 10 year program monitors 20-25 sites county-wide, and recently added sites in the Cedar River watershed*

- c) Install and operate continuous flow meters on primary river segments.
 - d) Expand the sampling program to a point when one or two water quality parameters can be recognized by the general public as indicators of water quality and the conditions that lead to said quality.
 - e) Seek out and actively participate in research studies which seek to clarify information relating to pollutant transport, surface water conditions, and health risk. *SWCD and MDA research on nitrogen filters for drain tile outlets.*
 - f) Demonstrate soil erosion control features at farm scale.
4. Education and Technical Assistance: (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):
- a) Support cooperative education efforts to promote Agricultural BMP's including, but not limited to: nutrient management (including reduction in fall application of nitrogen), buffers for protected waters and sensitive features like sinkholes, soil testing, pesticide application, etc...
See 4.j. (under Core Activities) above.
 - b) Inform all citizens of the importance of sealing unused wells. *This topic is annually included in a news release to area newspapers.*
 - c) Demonstrate options for treatment of milkhouse waste. *Drainfield installed at one dairy*
 - d) Assist municipalities to develop and enforce a Shoreland Overlay Zoning District, Stormwater Management Plans, and Wellhead Protection Plans. *Dodge Center adopted Shoreland Overlay District. Mantorville in process.*
 - e) Lead the effort to write a plan with goal to repair all failing septic systems. Part of the plan should be education and incentives to encourage homeowners to voluntarily repair their failing septic systems. Education should include information about the risks of a failing system, how to recognize a failing system, how to repair it, and where to get financial assistance. The education should include a comparison of the "facts vs. myths" regarding mound type individual sewage treatment systems.
 - f) Lead a demonstration of Stormwater Management techniques, conducted on a "farm scale" or construction site, that illustrate methods to retain and treat storm water runoff including wetland restoration.
5. Financial Assistance: (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):
- a) In addition to existing grant and loan programs, seek opportunities for financial assistance for activities such as:
 - b) Grants to feedlot owners to fix physical conditions that pose a pollution potential. *Provide grants to about 5 feedlots for repairs*
 - c) Low interest loans for replacing septic systems. The loan payback system should include an option for a special assessment payable on the property tax statement. *Provide AgBMP Loans to many landowners for septic repair*
 - d) Grants to landowner who seek to restore wetlands
6. Regulation, Ordinance, Planning: (*These activities support all "Priority Concerns" and all "Water Management Plan Objectives"*):
- a) Implement the South Zumbro Watershed Storm Water and Capital Improvement Plan.
 - b) Adopt a policy and process that supports full enforcement of MN Rule 7020 including: regularly verifying that Manure Management Plans are properly implemented, regularly inspecting feedlots for compliance, and enforcing Open Lot Agreements. Inspections should occur on 20% of the feedlots each year. Enforcement policy should include easily administered penalties for violations.
Enforcement and compliance inspection effort currently focused on feedlots between 300 and 1000 animal units. See section 6.a under Core Activities pertaining to feedlot compliance inspections above. Inspections of all feedlots registered between 300 and 1000 will take place every four years to coincide with registration requirements. An annual 20% inspection rate of all feedlots is not possible at this time at current staffing level due to bio-security issues.

OPEN LOTS – Department will obtain MNFarm rating for open lots as required by MN Rules 7020. The plan is to utilize LiDAR with pictometry to do as much work as possible prior to site visit. Open lots will be visited in the following priority order:

Signed up for OLA

Open lots in shoreland

All other open lots.

- c) Adopt a policy and process that supports full enforcement of stormwater management and erosion control standards including standards found in the Zoning Ordinance and construction stormwater permits. *Enforcement and compliance inspection effort currently focused required 50 foot vegetative buffer and stormwater management on newly permitted land uses. Stormwater section of ordinance will be re-written during comprehensive zoning amendment planned for 2010.*
 - d) Encourage growth in or near the cities, utilizing city services. Discourage expansion of the designated Urban Expansion District (2005 Zoning Ordinance) prior to completion or full development within the current boundary. *For past 3 years county has appointed a Land Use Task Force to look at a variety of land use issues. They have advised the county on issues of zoning enforcement, feedlot setbacks, and growth management.*
 - e) Discourage large-lot rural housing outside the Urban Expansion District. Encourage cluster, low impact development with associated open space where rural subdivisions are allowed. *Current Comprehensive Land Use Plan and Zoning Ordinance support this goal.*
 - f) Support efforts to protect unique natural resources and open space. *Current Comprehensive Land Use Plan and Zoning Ordinance support this goal. All applications for conditional zoning permits are reviewed to consider impacts of the proposed land use.*
 - g) Support efforts to sunset old plats in rural areas that have not been developed (see Goodhue Co. as example).
 - h) Lead in the implementation of a system that tracks compliance with septic system maintenance standards and regularly notifies the owner when maintenance is due. *County has led a regional project where process and software was tested and found the process burdensome and software inadequate.*
 - i) Evaluate the pros and cons of a “soil loss ordinance”; consider options for implementation in the county.
 - j) Require landowners to be in compliance with all regulations as a condition of approval of any zoning permit (even regulations unrelated to the permit request; for example....proof of compliance with shoreland buffer standards on all land before a zoning permit for a structure is approved.) *Ongoing- See 6.a under Core Activities above. County has not required compliance with all unrelated regulations prior to zoning permit approval; however conducting the site inspections have lead to resolution of existing unrelated ordinance violations identified on site.*
7. Administration and Coordination: *(These activities support all “Priority Concerns” and all “Water Management Plan Objectives”):*
- a) The County will collaborate with partners to reach shared goals and objectives. Partners include Soil and Water Conservation District Federal Agencies, State Agencies, Local Governments, Joint Powers Boards, not for profit organizations, businesses, and individuals. *Ongoing- Partners serve as members of County Water Plan Advisory Committee and often collaborate on projects. County is a member of SE MN Water Resources Board and participates in multi-county projects.. The Department works closely with SWCD & NRCS on buffer and feedlot issues. ZA is working with DNR Waters Floodplain Hydrologist to update/revise existing Floodplain Maps. MPCA feedlot staff contact CFO for assistance with state permitted NPDES sites and complaints. Appropriate State and federal Agencies are consulted as necessary to assist in implementation of mandated programs.*
 - b) The county, when practical, will develop work plans for completing accessory actions and apply for grants to complete the work plans. *Ongoing- County is a member of SE MN Water Resources Board and participates in multi-county projects. County also regularly applies for grants to complete accessory activities.*

Appendix B. PRAP County Local Water Management Performance Standards

COUNTY LOCAL WATER PLANNING PERFORMANCE STANDARDS

LGU Name: DODGE

Performance Area	Performance Standard	Level of Review	Rating	
	<ul style="list-style-type: none"> ■ Basic practice or statutory requirement ★ High performance (optional) standard (see instructions for explanation of standards; X= corrected)	I Annual Compliance II BWSR Staff Review & Assessment (1/5 yrs)	Yes, No, or Value	
			YES	NO
Administration	■ eLINK report: completed on time	I	X	
	■ Local match for grant: certified	I	X	
	■ Drainage authority buffer strip report submitted	I	X	
	★ Public drainage records: meet modernization guidelines	II		X
Planning	■ Local water mgmt plan: 10-yr voluntary but unexpired w/o lapse	I	X	
	★ LWM implementation plan completed within 5 yrs of plan adoption	II	NA	
	★ Annual plan priorities based on water quality trend data for key water resources	II	X	
Execution	■ Executed projects aligned with priority concerns	II	5/7	
	★ Non-state \$ leveraged with all state funds	II	80,000	
	★ Comparison of planned with actual program expenditures	II	100%	
	★ Data collected to track outcomes for each priority concern	II	X	
	★ Water quality trends tracked for priority water bodies	II	X	
Communication & Coordination	■ Communication piece: sent within last 12 months	I	X	
	★ Obtain stakeholder input: within last 5 yrs	II	X	
	★ Partnerships: liaison with SWCDs/WDs and cooperative projects/tasks done	II	X	
	★ Report to water plan advisory committee on plan progress	II		X
	★ Track outcomes for public education objectives	II	X	
	★ County local water plan on county website	II	X	
	★ Water management ordinances on county website	II	X	

Appendix C. PRAP Discussion Questions (Part 3)

Level II Review: Assessing Progress Toward Plan Objectives

Name of Organization:

Contact Person (Name and contact info.):

Part 3: Discussion Questions

How to use this form: Please schedule a special meeting or designate time at a regular board or water planning committee meeting to fill out this form. The BWSR board conservationist and PRAP Coordinator will attend the meeting to explain the overall performance review process and observe the discussion. Your answer to each of the following questions should be based on discussion among board or committee members and principal staff and should reflect the consensus of those people. Return the completed form in electronic format to the BWSR PRAP coordinator. Remember: *your responses on this form become public information.*

1. **How often does your board review your plan or assess progress on planned objectives?**
2. **Where has your organization made the most progress in implementing your plan objectives in the past few years? To what do you attribute that progress?**
3. **For which objective(s) has your organization had the most difficulty making progress? What are the most likely reasons for this lack of progress?**
4. **Since the plan was completed, have there been any unforeseen opportunities or problems that have influenced your board's decisions about which objectives to pursue? Explain those influences.**
5. **What are the five most significant factors that are affecting (positively or negatively) your organization's ability to implement your planned objectives?**
 - a.
 - b.
 - c.
 - d.
 - e.
6. **For which of the factors listed in #5 would your organization like some assistance for either taking better advantage of positive factors or overcoming negative factors? Identify the type of assistance that would be most helpful.**
7. **How will your organization use any of the information you gained from this review in communicating or working with your partners and customers?**

APPENDIX E

Clean Water Act Section 303 [d] List (Draft 2010) of Impaired Waters in the County

Assessment Unit	ID	Impaired Use	Impairment Cause	Impairment Status
Cascade Creek: Headwaters to Unnamed cr	07040004-639	AqLife	Turbidity	TMDL Required
Cedar River: Headwaters to Roberts Cr	07080201-503	AgRec	Fecal Coliform	TMDL Required
Cedar River: Headwaters to Roberts Cr	07080201-503	AqCons	Mercury in Fish Tissue	TMDL Approved
Cedar River: Headwaters to Roberts Cr	07080201-503	AqCons	'PCB in Fish Tissue	TMDL Required
Dodge Center Creek: JD 1 to S Br M Fk Zumbro R	07040004-592	AqLife	Turbidity	TMDL Required
Milliken Creek: Unnamed cr to M Fk Zumbro R	07040004-555	AqLife	Turbidity	Proposed Impairment Under USEPA Review
Milliken Creek: Unnamed cr to Unnamed cr	07040004-554	AqLife	Turbidity	TMDL Required
Salem Creek: T106 R16W S30, west line to S Fk Zumbro R	07040004-503	AqRec	Fecal Coliform	TMDL Approved
Unnamed creek: Unnamed cr to Salem Cr	07040004-596	AqRec	Fecal Coliform	TMDL Required
Unnamed creek: Unnamed cr to Unnamed cr	07040004-595	AqRec	Fecal Coliform	TMDL Required
Zumbro River, Middle Fork, North Branch: Headwaters to M Fk Zumbro R	07040004-523	AqLife	Turbidity	Proposed Impairment Under USEPA Review
Zumbro River, Middle Fork, South Branch: Dodge Center Cr to M Fk Zumbro R	07040004-525	AqLife	Turbidity	TMDL Required
Zumbro River, Middle Fork, South Branch: Headwaters to Dodge Center Cr	07040004-526	AqLife	Turbidity	TMDL Required
Zumbro River, Middle Fork: Headwaters to N Br M Fk Zumbro R	07040004-522	AqLife	Turbidity	TMDL Required
'Polychlorinated Biphenyls (PCB)				

The Final List of 2010 Impaired Waters is expected to be approved by the U.S. Environmental Protection Agency.

