

Cottonwood County



2017-2027

COTTONWOOD COUNTY LOCAL WATER MANAGEMENT PLAN

A 10-year plan with a 5-year implementation schedule. 2017-2027

I.	Table of Contents	<u>Page</u>
A.	Executive Summary	4
1.	Purpose & Introduction	4
2.	Description of Priority Concerns	8
3.	Summary of Goals, Actions, and Projected Costs	9
4.	Consistency with Local, State and Regional Plans	11
5.	Summary of Recommended Amendments to Other Plans and Official Controls	11
B.	Priority Concerns	11
1.	Identification of Priority Concerns	11
2.	Assessment of Priority Concerns	12
3.	Goals and Objectives to Address Priority Concerns	28
C.	Implementation to Address Priority Concerns	30
D.	Implementation Schedule of Ongoing Activities	61
1.	Priority Concern 1. Improve Surface Water Quality	61
2.	Priority Concern 2. Protect Groundwater	61
3.	Priority Concern 3. Drainage Management	61
4.	Priority Concern 4. Feedlots and Subsurface Septic Treatment System	62
5.	Additional Programs	62
E.	Appendix	63
1.	Acronyms Used	63
2.	Watershed Report Card - Cottonwood River	64
3.	Watershed Report Card - Middle Minnesota	68
4.	Watershed Report Card - Watonwan River	72
5.	Watershed Report Card - West Fork Des Moines	76
6.	Cottonwood County Comprehensive Local Water Plan - Scoping Document	80
7.	Review of Cottonwood County Comprehensive Local Water Plan	127

For additional information on water management in Cottonwood County, Minnesota, contact:
Cottonwood Soil and Water Conservation District (SWCD) - Cottonwood County Land
Management Office
339 Ninth Street, Windom, MN 56101

A. Executive Summary

Cottonwood County is in southwestern Minnesota, adjacent to Murray, Redwood, Brown, Watonwan, Jackson, and Nobles counties. The City of Windom is the county seat. Cottonwood County's population in the 2010 census was 11,687 and the City of Windom's population was 4,646.

The Coteau des Prairies - a conspicuous ridge extending northwest to southeast across the region - bisects Cottonwood County into two major drainages. Watersheds of the Cottonwood, Watonwan, and to a lesser extent the Little Cottonwood and Blue Earth, drain in a northeasterly direction into the Minnesota River, which meets the Mississippi River at St. Paul. The West Fork Des Moines River (WFDMR) watershed drains south into Iowa and eventually into the Mississippi River.

A.1 Purpose & Introduction

The Cottonwood County Local Water Management Plan is intended to identify existing and potential water issues in the context of watershed units and groundwater systems, informing specific implementation actions to achieve goals for sound hydrological management of water and related resources.

Requirements of a local water plan are set forth in current state statute (M.S. 103B.311, Subd. 4.). The plan must address management of water, effective environmental protection, and efficient resource management, and must be consistent with local water management plans prepared by counties and watershed management organizations wholly or partially within a single watershed unit or ground water systems. This Water Plan is a ten-year management plan with a five-year implementation schedule.

The County Board of Commissioners adopted a resolution on March 4, 2016 to update this plan, per Minnesota Statutes now in effect.

This is the plan update for the fourth edition of the local water management plan for Cottonwood County, which was completed in March of 2017 by a Public Hearing before the Cottonwood County Board of Commissioners.

Major accomplishments under Cottonwood County's previous water management plans included from 2007 - 2017:

- The Cottonwood County Commissioners entered into an 'Agreement for the Provision of Services' June of 2011 with the Cottonwood SWCD. Programs to be administered include:
 - Local Water Management Coordinator
 - Management of the Natural Resources Block Grant Programs
 - Administrator of the Wetlands Conservation Act
 - Assistance for the Feedlot Program
 - Coordination of the SSTS Program
- In 2006, the Cottonwood SWCD contracted with the Greater Blue Earth River Basin Alliance (GBERBA) to provide the Administrative and Technical Coordinators (equal to one FTE) for the Joint Powers Organization.

- Managed and provided funds for county residents to test well water for nitrates, lead and bacteria.
- Promoted the sealing of abandoned wells throughout the County.
- Promoted the replacement of non-compliant septic systems and assisted residents with the installation of systems for new construction. Maintained files and database.
- Secured funds for the Low Interest Loan Program through the MN Department of Agriculture to provide funding for installation of septic systems, agricultural waste systems and conservation tillage equipment continue to look for additional sources of this funding.
- Worked with Minnesota Pollution Control Agency (MPCA) as a Delegated County for the Feedlot Program, and maintained the feedlot database.
- Worked with county livestock producers in registering their feedlots and completing their Manure Management Plans.
- Provided county livestock producers with funding for testing samples of manure.
- Provided technical assistance and guidance in developing Well Head Protection Plans.
- Administered the Wetland Conservation Act.
- Administered the Shoreland and Flood Plain Management Program.
- Partnering with the Heron Lake Watershed District (HLWD), WFDNR Coordinator (and others) on the WFDNR Total Maximum Daily Load (TMDL) Implementation Plan, and the WFDNR TMDL Implementation Project to complete a Level III Feedlot Inventory in the Des Moines River Watershed.
- Partnering with Redwood-Cottonwood River Control Area (RCRCA) (and others) on the Cottonwood River Fecal Coliform Bacteria and Turbidity TMDL Implementation Plan.
- Updated the Cottonwood County SSTS Ordinance #38 with approval in 2013.
- Applied for and received a Mississippi River Basin Initiative grant through the NRCS for the Little Cottonwood River Watershed.
- Received a Board of Water and Soil Resources (BWSR) Clean Water Fund grant for the hiring of a MRBI Technician to be shared with the Cottonwood and Brown SWCDs.
- Continued partnership through GBERBA and contracted Watonwan Resource Specialist working to assist Blue Earth, Brown, Cottonwood, Jackson, Martin and Watonwan counties when requested.
- Participated in the Watonwan Watershed MPCA Watershed Restoration and Protection Strategies (WRAPS).
- Participated in the Middle Minnesota MPCA WRAPS.
- Participated in the WFDNR Watershed MPCA WRAPS.
- Participated in the Cottonwood River Watershed MPCA WRAPS.
- Partnered with the Jackson SWCD to complete an intensive inlet and lakeshore restoration project on Fish Lake with Clean Water Legacy funds.
- Assisted in completing a pilot and establishing the Minnesota Department of Agriculture (MDA) Minnesota Agricultural Water Quality Certification Program in Cottonwood County and 21 other South Central and Southwestern Minnesota Counties.
- Since 1998, Cottonwood County, along with Brown and Nicollet Counties, sponsor and help coordinate the annual Children's Water Festival held in the month of March for 4th grade students of the three counties.

- Provided funding for 5th Grade Conservation Day, which is a joint activity between Jackson and Cottonwood SWCDs.
- Provided funding for the Southwest Minnesota Association of Soil and Water Conservation District Employees (MASWCDE) Environmental Fair attended by 6th grade classes of Cottonwood County since 1992.
- Participated in the State of Minnesota Des Moines River Watershed Conservation Resource Enhancement Program (CREP), Reinvest in Minnesota (RIM) Buffer Program and the RIM/Wetland Restoration Program (WRP) conservation programs.
- Provided funds to plant trees in shelterbelts and wildlife plantings.
- Assisted with the establishment and continuing effort of the Windom and Mountain Lake Tree Commissions.
- Participated in the State One Watershed One Plan steering committee through Minnesota Association of Soil and Water Conservation Districts (MASWCD) and BWSR.
- The Cottonwood SWCD received the MASWCD Soil and Water Conservation District of the Year award in 2015.

The Cottonwood SWCD administers the Local Water Management Program in Cottonwood County. Cottonwood County agreed to allow the Cottonwood SWCD to manage the Plan update process and convene the Cottonwood County Local Water Management Task Force.

Task Force membership currently includes:

2016-17 Local Water Management Plan Task Force Members

- Becky Alexander, Cottonwood SWCD
- Tom Appel, Cottonwood County Commissioner
- Dave Bucklin, Cottonwood SWCD
- Bruce Gross, Des Moines Valley Deer Hunters
- Kay Gross, Cottonwood SWCD
- Renee Harnack, Cottonwood SWCD
- Mike Haugen, City of Windom
- Dominic Jones, Red Rock Rural Water System
- Clark Lingbeek, Cottonwood Soil and Water Conservation District Supervisor, Township Official, Pheasants Forever
- Jared Morrill, Cottonwood County Land Management Office
- Wendy Meyer, City of Mountain Lake
- Kerry Netzke, Area II River Basin Inc. and Redwood Cottonwood River Control Area
- Erin Norquist HLWD
- Brian Nyborg, MN Department of Natural Resources (DNR)
- Kelly Pfarr, Natural Resources Conservation Service (NRCS)
- Daryl Tasler, Cottonwood SWCD Supervisor, Ducks Unlimited
- Sharron Tibodeau, Cottonwood County Planning Commission Member
- Jan Voit, HLWD

Other Participants

- Donna Gravley, Cottonwood County Commissioner
- Jim and Coralee Krueger, City of Windom Residents
- Margaret Horkey, City of Windom Resident

- Sarah and Wesley Hiniker, City of Windom Residents
- Ed Lenz, BWSR
- Jill Sackett Eberhart, BWSR
- Hannah Herzfeld, Cottonwood SWCD
- Marty Mollenhauer, Cottonwood County
- Dustin Anderson, SWCD and Greater Blue Earth River Basin Alliance (GBERBA)
- Todd Luke, United States Fish & Wildlife Service (USFWS)
- Rob Sip, MDA
- Wayne Cords, MPCA
- Amanda Strommer, Minnesota Department of Health (MDH)

A.1.a Public and Internal Forums

3-1-2016	Cottonwood County Board of Commissioners approved the Resolution to Update the Cottonwood County Comprehensive Local Water Management Plan.
3-4-2016	Invitation to Submit Priority Concerns for the Update to the Cottonwood County Comprehensive Local Water Plan
3-9-2016	Published the Notice of Plan Update.
3-11-2016	Notice of "Kick-off" meeting for the Water Plan Task Force and the beginning of the water plan revision process.
3-31-2016	Water Plan Task Force Meeting Kick-Off Meeting. (Attendance 14)
4-6-2016	Cottonwood County Water Plan Task Force Open House. (Attendance 12)
4-22-2016	Deadline for Public Comments.
4-26-2016	Cottonwood County Water Plan Task Force Meeting. (Attendance 13)
5-3-2016	Cottonwood County Board of Commissioners – Presentation of Priority Scoping Document and Board Approval.
7-27-2016	BWSR Southern Regional Committee to discuss comments received from State review agencies and others.
8-25-2016	BWSR Official Comments Pertaining to the State Review of the Cottonwood County Priority Concerns Scoping Document for the Local Water Management Plan Update.
3-7-2017	Notice of Intention to Enact – Cottonwood County Comprehensive Local Water Management Plan – Public Hearing – Cottonwood County Citizen.
3-23-2017	Public Hearing to review the Cottonwood County Comprehensive Local Water Plan.
3-27-2017	Final Draft of the Cottonwood County Comprehensive Local Water Plan sent to State Agencies for review.
4-27-2017	Final Comments due from State Agencies.
5-4-2017	BWSR Southern Region Committee Meeting reviewing Plan Update.
5-24-2017	BWSR Board Meeting to approve the Cottonwood County Comprehensive Local Water Plan Update.

A.1.b Plan Adoption

Upon approval of this plan by the Minnesota BWSR, Cottonwood County has up to 120 days to pass and Adoption and Implementation Resolution. After final adoption, the plan may be amended in a similar process, by petitioning the BWSR Board, scheduling a public hearing, and sending notice to the required parties.

July 2017 Cottonwood County Board of Commissioners approved the Adoption and Implementation Resolution for the Cottonwood County Comprehensive Local Water Plan.

A.2 Description of Priority Concerns

The Priority Concerns listed below were selected by the Water Plan Task Force members by consensus during the 2016-2017 plan development and reviewed by the Water Task Force in 2016 (Cottonwood County Comprehensive Local Water Plan – Scoping Document). While the assessment of priority concerns utilized the best available data, this plan rests solidly on information and analysis contained in previous editions of the county’s local water management plan.

Priority Concern 1. Improve Surface Water Quality.

Protecting soil from erosion is an ongoing challenge. Improved land use and agricultural best management practices are necessary to address the water quality of lakes, wetlands and rivers. MPCA listing of impaired waters requires local strategies to meet TMDL standards.

Priority Concern 2. Protect Groundwater.

Portions of Cottonwood County have enjoyed adequate groundwater supplies, while other areas have had trouble with sufficient supply. There is increasing concern with groundwater quality and long-term supply. Efforts to protect groundwater should be focused on Drinking Water Supply Management Areas (DWSMA) and surficial aquifer areas.

Priority Concern 3. Drainage Management

Anthropogenic development has greatly impacted the flow of water across the landscape. Management of the resulting drainage system – modern hydrograph – is typically disjointed and uncoordinated, leading to issues with both quantity and quality of water.

Priority Concern 4. Feedlots & SSTS

Nutrient management plans and controlling feedlot runoff are important tools in preventing water quality issues. There are also many dispersed farmsteads and rural residential properties with outdated septic systems that pose an adverse risk to public health; there is a great need and demand to continue upgrades.

A.3 Summary of Goals, Actions, and Projected Costs

Goals and Actions were selected to address priority concerns (CCCLWP – Scoping Document) on a watershed basis, with a focus on principles of sound hydrological management. A watershed based approach will help in prioritizing future funding opportunities for Cottonwood County.

Priority Concern 1. Improve Surface Water Quality.

This concern will be addressed to prevent further degradation of stream and lake water quality. Objectives include protecting soil from erosion and prevent agricultural runoff, wetland restoration and management, address TMDL impaired waters, and buffers on Public and Other waters.

Implementation actions include promotion and education, providing technical assistance for conservation programs and best management practices, seeking financial assistance for conservation practices, and work with local, state and federal partners on measures to improve water quality and provide technical and administrative support for watershed work in TMDL impaired watersheds.

Projected total costs over the ten years from the *'Implementation to Address Priority Concerns' – 'Goals and Objectives – Action'* section of the management plan amendment includes approximately \$10,822,500 for projects and financial assistance \$13,417,500 for technical and administrative assistance and \$628,000 for outreach and education. All dollar figures are estimates and recognize approximate costs (technical assistance calculated adding specific action items and twenty-five percent of the project costs). There will also be in-kind associated with each action item written.

Priority Concern 2. Protect Groundwater.

This concern will be addressed to assure long-term quality and quantity of groundwater supplies, with a priority on Drinking Water Supply Management Areas (DWSMA) and surficial aquifers. Objectives include support wellhead protection planning and implementation, prevent nitrate and pesticide infiltration of groundwater with emphasis on shallow groundwater areas, prevent groundwater contamination from unused wells, and protecting long-term water supply.

Implementation actions include providing technical assistance for conservation programs and best management practices, seeking financial assistance for landowners, seek funding to enroll eligible acres into the RIM or CREP Wellhead Protection Program, assist landowners and operators with nutrient management plans, outreach and education, maintenance of GIS layers, testing well water quality, providing assistance and funding to seal unused wells, and work with cities and water providers to protect our long-term water supplies through enforcement of zoning ordinances.

Projected total costs over the ten years from the '*Implementation to Address Priority Concerns*' – '*Goals and Objectives – Action*' section of the management plan amendment includes approximately \$136,125 for projects and financial assistance, \$706,875 for technical and administrative assistance, and \$106,500 for outreach and education. All dollar figures are estimates and recognize approximate costs (technical assistance calculated adding specific action items and twenty-five percent of the project costs). There will also be in-kind associated with each action item written.

Priority Concern 3. Drainage Management

This concern will address the stream and lake water quality and hydrology by better managing public and private agriculture drainage systems. Objectives included addressing impacts of drainage management, develop a comprehensive multipurpose drainage management plan, and create more short term and long term water storage.

Implementation actions include promote conservation drainage practices throughout the County, seek funding for the installation of ag and urban BMPs, develop a comprehensive multipurpose drainage management plan, develop a GIS layer of all public drainage systems, identify areas for short term and long term water storage, and complete the DEM hydro-conditioning of watersheds in the County.

Projected total costs over the ten years from the '*Implementation to Address Priority Concerns*' – '*Goals and Objectives – Action*' section of the management plan amendment includes approximately \$8,418,750 for projects and financial assistance, \$3,341,250 for technical and administrative assistance, and \$0 for outreach and education. All dollar figures are estimates and recognize approximate costs (technical assistance calculated adding specific action items and twenty-five percent of the project costs). There will also be in-kind associated with each action item written.

Priority Concern 4. Feedlots & SSTS

This concern will address the protection of public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety situations. Objectives include assisting feedlots owners to maintain compliance with state rules 7020 standards and continuing to bring nonconforming subsurface sewage treatment systems into compliance with state standards.

Implementation actions include provide education and outreach for SSTS maintenance, seek loan and project funding for the upgrade of non-compliant and unsewered septic systems, technical assistance for nutrient and manure plan development, seek implementation for Agricultural Best Management Practices (AgBMPs), comply with feedlot registrations and Tempo reporting with MPCA,

maintain Geographic Information System (GIS) layers, review ordinances, and provide financial and technical assistance to upgrade feedlots. Projected total costs over the ten years from the *'Implementation to Address Priority Concerns' – 'Goals and Objectives – Action'* section of the management plan amendment include approximately \$22,275,000 for projects and financial assistance, \$8,655,000 for technical and administrative assistance, and \$25,500 for outreach and education. All dollar figures are estimates and recognize approximate costs (technical assistance calculated adding specific action items and twenty-five percent of the project costs). There will also be in-kind associated with each action item written.

A.4 Consistency with Local, State and Regional Plans

Cottonwood County Land Management Office administers the County's comprehensive land use plan and zoning ordinance. The Cottonwood SWCD and the Cottonwood County Land Management Office work closely together to ensure that environmental issues are handled consistently throughout Cottonwood County. The Cottonwood County 2005 Comprehensive Plan identifies issues, goals, objectives, policies and tasks that have been reviewed for consistency with the 2017 comprehensive local water management plan update.

A.5 Summary of Recommended Amendments to Other Plans and Official Controls

No specific amendments are recommended at this time. Action items include updates to the comprehensive plan and zoning ordinances within this document's management timeline. It would be recommended to incorporate data from this plan into other local plans and controls when they are updated.

This plan will be amended to include approved One Watershed One Plan documents for each of the major watersheds in the County. It is anticipated that all major watersheds in the county will have an approved One Watershed One Plan by 2025.

B. Priority Concerns

B.1 Identification of Priority Concerns

Priority Concerns for local water management were selected by the Cottonwood County Local Water Management Plan Task Force members after reviewing the concerns submitted by state and local agencies and other stakeholders during the 2016-2017 planning sessions.

For the updated document, concerns and comments were requested from:

- Minnesota Board of Water and Soil Resources
- Minnesota Department of Agriculture
- Minnesota Department of Health
- Minnesota Department of Natural Resources

- Minnesota Environmental Quality Board
- Minnesota Pollution Control Agency
- Cottonwood County Land Management Office
- Cottonwood SWCD
- NRCS, Windom Field Office

Local water management concerns and comments were received from:

- Minnesota BWSR
- MPCA
- MDA
- MDH
- USFWS
- Cottonwood SWCD
- NRCS, Windom Field Office

Concerns were presented at the Water Task Force Meetings and discussed and implemented into the water management plan Priority Concerns.

B.2 Assessment of Priority Concerns

Cottonwood County consists of seven (7) incorporated cities, one (1) unincorporated village, and eighteen (18) townships. The American Community Survey (ACS) reported that there are an estimated 11,632 residents in the county as of 2015, 0.47% less than the 2010 US Census. The MN State Demographic Center reported 11,687 residents in the county as of 2010 (US Census), 3.9% less than the 12,167 people counted in the year 2000 US Census and 7.6% less than the 12,648 counted in 1990 (Table 1).

The number of households in the county as reported by the MN State Demographic Center is 4,857 households as of the 2010 census, and an estimated 5,386 Housing units as of 2015 (ACS).

Geographically, US Highway 71 runs north-south through Windom. MN State Highway 60 and State Highway 62 run east-west across the county. MN State Highway 60 runs on a diagonal through Windom, Bingham Lake and Mountain Lake between Worthington and Mankato, providing a major link between the Twin Cities and Sioux City, Iowa. The Union Pacific Railroad runs parallel to Highway 60.

Table 1. Cottonwood County Population by Township or City		
Township/City	2010 Census	2015 ACS Estimate
Amboy Township	164	141
Amo Township	132	123
Ann Township	179	162
Carson Township	280	322
Dale Township	151	153
Delton Township	123	167
Germantown Township	207	220
Great Bend Township	287	308
Highwater Township	166	172
Lakeside Township	237	207
Midway Township	219	210
Mountain Lake Township	384	280
Rosehill Township	166	146
Selma Township	193	215
Southbrook Township	79	113
Springfield Township	120	111
Storden Township	165	138
Westbrook Township	216	204
City of Bingham Lake	126	123
City of Comfrey (Part)	16	(Total) 382
City of Jeffers	369	419
City of Mountain Lake	2,104	2,076
City of Storden	219	248
City of Westbrook	739	456
City of Windom	4,646	4,601
County Totals	11,687	11,632
Source: MN State Demographic Center		

Agriculture is the primary economic driver in the county, with some industrial businesses along Highway 60. Based on 2011 National Land Cover Database (NLCD) data 84% of the the county was cultivated, with 2.5% wetland area and 0.02% shrub/scrub land, 5.3% developed/urban use, and 1.61% open water (Table 2). The University of Minnesota found that about 82% of the land area in Cottonwood County was cultivated, with 7% in grass/shrub/wetlands, 6% urban and just over 1% covered by water in the year 2002 (Remote Sensing and Geospatial Analysis Laboratory).

Cottonwood County is on the edge of the Midwestern humid area, with average annual precipitation of 23-29 inches (Minnesota's state-wide average is 27.01 inches). Average precipitation can vary from less than 17 inches (1955) to over 41 inches (1993). From October of 2015 to October of 2016 the precipitation total was approximately 40.89 inches within Cottonwood County. In 2010, over 40 inches of precipitation was observed (State Climatology Office DNR Waters at <http://climate.umn.edu/>).

Table 2. Land Cover Acres		
Land Cover	Acres	Percent
Barren Land	277.11	0.07
Cultivated Crops	350,281.92	84.79
Forest	2,438.79	0.59
Developed	21,882.55	5.30
Wetland	10,547.36	2.55
Hay/Pasture	7,243.86	1.75
Herbaceous	13,727.78	3.32
Open Water	6,652.66	1.61
Shrub/scrub	63.99	0.02
Total Acres	413,116.02	100.00
<small>For the purposes of this graph, some categories have been combined, such as Forest and wetlands</small>		

Previous editions of the Water Plan contain historical weather data and trends.

Southwestern Minnesota has a conspicuous feature called the Coteau des Prairies, meaning "highland of the prairies" or "hill of grasses", which bisects Cottonwood County. This is a ridge that extends northwest to southeast across South Dakota, Minnesota and on into Iowa. The rolling topography of the county consists of glacial till on top of Sioux Quartzite and Cretaceous sandstone bedrock. Depth to bedrock is variable, deepest in the western part of the county, with outcrops of Quartzite in the northeast. Pre-settlement vegetation consisted of grasslands and hardwood forests in river-bottom lands.

Five major watersheds cross the county borders. The three larger watersheds include the Cottonwood River Watershed which encompasses the north-central and western portion of the county covering about 245 square miles or 38% of the county land area; the Watonwan River Watershed which covers the eastern portion of the county and contains 198 square miles or 31% of the county land area; and the WFDNR Watershed located in the southwestern and central portions of the county covering 165 square miles or 25% of the county land area. The two smaller watersheds include the Middle Minnesota Watershed (also called the Little Cottonwood River Watershed) which starts close to the center of the County and continues to the very northeastern edge of Cottonwood County covering 39 square miles or 6% of the land area; and the smallest one, the Blue Earth Watershed which covers only 1.3 square miles in the southeastern corner of the county. All but the WFDNR drains into the Minnesota River.

The following rivers and creeks drain within these watersheds:

- Cottonwood River Watershed: Dry Creek, Dutch Charley Creek, Highwater Creek, Mound Creek, Pell Creek
- Watonwan River Watershed: Watonwan River, North Fork of the Watonwan River, South Fork of the Watonwan River, Unnamed Branch
- WFDNR Watershed: Des Moines River, Heron Lake Outlet
- Middle Minnesota River Watershed: Little Cottonwood River
- Blue Earth River Watershed: no named streams

In addition to flowing creeks and streams, there are about 30 bodies of still water in Cottonwood County covering 6,653 acres of land and average about 170 acres each in size. Surface waters are typically undeveloped and most of the runoff and drainage water is not retained. High priority water quality problems are seen in areas where sediment, nutrients, chemicals or other pollutants discharge to DNR designated protected waters or to any high priority waters as identified in this plan, or discharge to a sinkhole or ground water. The pollutant delivery rate to the water source is in amounts that will impair the quality or usefulness of the water resource. Typical land use and management practices have caused water quality degradation in all of the County's lakes and streams. Due to the increase in nutrients in the water column, the County's lakes have seen an increase in algae blooms and other suspended sediments. With this decrease in water clarity, the sunlight is not able to reach all areas of the lake which restricts many kinds of plant growth. This not only eliminates a food supply for many game fish, but it also favors the growth of less desirable species such as carp and black bullhead. These fish then cause greater destruction to water bodies by uprooting other types of vegetation and sending more debris into the water column. (For more information on land use, see the Cottonwood County 2005 Comprehensive Plan).

Priority Concern 1. Improve Surface Water Quality.

Surface waters of Minnesota are managed under the doctrine of riparian rights. This means that riverbank landowners have equal rights to reasonable use of waters that border their property. The Minnesota Department of Natural Resources (DNR) Division of Waters has the authority to issue permits for water use, and to limit withdrawals of surface water and groundwater in accordance with the public interest (see also the discussion of groundwater below).

a. Protect Soil from Erosion and Prevent Agricultural Runoff

The *Cottonwood County 2005 Comprehensive Plan* encourages farmers to adopt Best Management Practices (BMPs) to optimize farm profits, conserve soil, and to protect and enhance ground and surface water quality. Simple conservation practices, such as grass waterways, terraces, and sediment basins, can substantially reduce the impacts of soil erosion on surface waters and wetlands.

High priority erosion problems occur in areas where erosion from wind or water is occurring equal to or more than twice the “tolerable rate” as defined by NRCS. High priority erosion problems also occur in any area that exhibits active gully erosion. As well, the focus-areas for this local water management plan, including watersheds of impaired waters, should be considered high priority for erosion prevention.

Conservation tillage, leaving adequate crop residue, provides a layer of protection from water and wind erosion and increases organic matter in the soil. Cottonwood SWCD and NRCS have completed tillage transect surveys in the past to better understand trends in local conservation tillage. Changes in market economics for corn and soybean production have raised concerns among producers about the efficiency of conservation tillage. Recent increases in the price of corn have led to predictions of increasing acres planted “corn-on-corn”, rather than the typical corn-soybean rotation. Farmers are pressed to get into the field earlier and earlier each year. These concerns must be addressed by ag educators and advocates, such as the University of Minnesota Extension Service, Watershed District, SWCD, and the Environmental Office, through promotion, education and demonstration.

Some highly erodible lands may benefit more by being taken out of production, or being protected as public lands. Cottonwood County operates several parks that offer natural recreation opportunities. Cottonwood County also has 18 DNR Wildlife Management Areas (WMAs), and 14 USFWS Waterfowl Production Areas (WPAs), as well as lands protected by the DNR divisions of Waters, Trails and Waterways, and Fisheries.

Voluntary conservation programs have proven a popular method to reward agricultural producers for doing their part to prevent erosion. Conservation Reserve Program (CRP), RIM, and Environmental Quality Incentives (EQIP) program and the Conservation Stewardship (CSP) program provide tools to return appropriate land to a native ecology that is better able to respond to erosion pressures. As of August 16, 2016, there are 9,931 acres of CRP and 6,262 acres of RIM and CREP and 48 acres in WRP in Cottonwood County, per the BWSR. Private conservation easements have also proven popular in other areas of the state and nation.

Effects of erosion are also evident on many of the county’s stream-banks and lakeshores. Aquatic plants provide a natural buffer between windswept open water and fragile shores. Drainage and development have eliminated many of these plants and upland vegetation, leading to bank erosion, runoff of fertilizer from fields and lawns, and other problems. The typical modern response has been rock rip-rap. A concerted effort to replace riparian vegetation in shorelands, including tree windbreaks, would help protect lake shores and restore wildlife habitat.

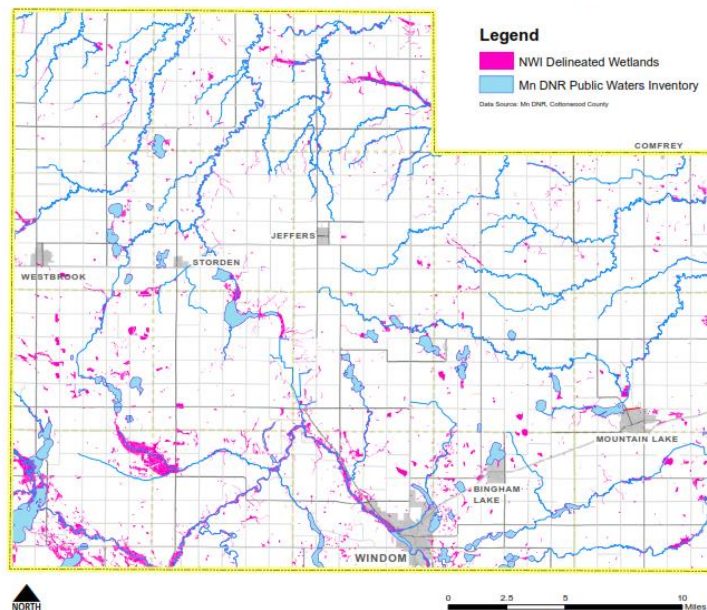
The State of Minnesota regulates the use of shoreland - land within 300 feet of a river or 1,000 feet of a lake. The DNR identifies three river types in

Cottonwood County (addressed in the Cottonwood County Zoning Ordinance): Transition River Segments, Agricultural River Segments, and Tributary River segments. The lakes within Cottonwood County are classified as Natural Environment, Recreational Development and General Development lakes. Guidelines for the development of lakes were developed by the DNR and adopted by the County in its zoning code. Most lakes in the County have areas that are unsuitable for development, such as wetlands or soils not capable for development (septic systems, wet soils, strength).

The *Cottonwood County 2005 Comprehensive Plan* calls on developers to complete a detailed study identifying the areas and development techniques, as well as long term land management practices, that would minimize environmental impacts to the watershed any time development is proposed in shoreland areas. New development is encouraged to focus on bodies of water best suited for more intensive uses; discouraging development around more sensitive areas. The Comprehensive Plan also encourages natural landscaping to enhance wildlife habitat and protect water quality. Development should conform to natural limitations presented by topography and soil to create the least potential for environmental degradation.

b. Wetland Restoration and Management

Fig. 1 Cottonwood County Wetlands Inventory



As the USFWS notes, historically, southwestern Minnesota was part of a huge grass and wetland complex called the Prairie Pothole Region of the Northern Tallgrass Prairie. Cottonwood County's remaining wetlands act as natural filters, holding water on the landscape, retaining flood waters, reducing erosion and allowing time for sediment to settle. These interrelated prairie potholes and wetland complexes also provide important habitat to a

variety of plants and animals. Wetlands also reduce the size and scope of storm event and snowmelt flooding.

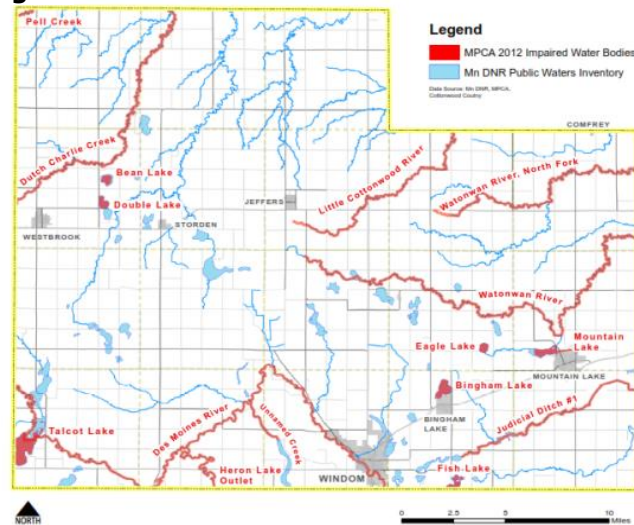
Wetlands need to be integrated into management of the larger drainage system to be of greatest benefit (Fig. 1). However, active wetland restoration would be required to show substantial differences. State and federal funding sources have not been found to be effective in promoting

wetland restoration in the county. However, new drain tile installation will continue to accelerate water flow to the potential detriment of downstream users, unless new and/or replacement wetlands are created to balance flows within and between watersheds.

c. TMDL Impaired Waters

The federal Clean Water Act requires states to adopt water quality standards. A water body is considered “impaired” or polluted if it fails to meet these standards. The Act requires the state to conduct a TMDL study to identify point and non-point sources of each of these pollutants. MPCA and other agencies are working to reduce impairments in these waters. Statewide, there are 2,575 river, lake and wetland impairments (2008 inventory) including 1,090 impaired by conventional pollutants and 1,476 by toxics (mercury, PCBs, other) (Table 3).

Fig. 2 2012 Impaired Waters Requiring a TMDL (Draft)



Cottonwood County is part of five ongoing initiatives to monitor water quality, specifically TMDL studies (Fig. 2). The WFDNR Watershed TMDL Implementation Plan for Multiple Impairments (ammonia, low oxygen, fecal coliform and turbidity) was approved in September 2009. The Cottonwood River Fecal Coliform Bacteria and Turbidity TMDL Implementation Plan was submitted June 2011- Public Comment Period April-May 2011. Draft TMDL Minnesota River for Turbidity – Public Comment Period February –April 2011. The Lower Minnesota River TMDL – Low Dissolved Oxygen – Implementation Plan approved February 2006. The Blue Earth River TMDL for Fecal Coliform – Implementation Plan approved November 2007.

MPCA is now following the Intensive Watershed Monitoring approach for both monitoring and assessments. This watershed approach is a 10-year rotation for addressing waters of the state on the level of Minnesota’s major watersheds. Since 2007, the MPCA and its partners have begun implementing this approach as recommended by the Clean Water County and directed by the Minnesota Legislature. (For MPCA project schedules, see (<http://www.pca.state.mn.us/index.php/view-document.html?gid=10228>))

Table 3. 2016 Impaired Waters Requiring a TMDL (Draft)				
Name	Stretch	Impaired Use	Impaired Cause	Status
Des Moines River	Windom Dam to Jackson Dam	AqLife AqRec AqLife	Ammonia, Dis. Oxygen Fecal Coliform Turbidity	TMDL Required TMDL Approved TMDL Approved
Des Moines River	Lime Creek to Heron Lake Outlet	AqRec AqLife	Fecal Coliform Turbidity	TMDL Approved TMDL Approved
Des Moines River	H.L. Outlet Windom Dam	AqLife	Turbidity	TMDL Approved
Table 3 Continued. Cottonwood County 2016 Impaired Waters Requiring a TMDL				
Name	Stretch	Impaired Use	Impaired Cause	Status
Heron Lake Outlet	Heron Lake (32-0057-01) to Des Moines River	AqLife AqLife	Turbidity pH	TMDL Approved TMDL Approved
Unnamed Creek (Mt. Lake Inlet)	Headwaters to Mt. Lake	AqLife	Macroinvertebrate Bioassessments	TMDL Required
Unnamed Creek	String Lakes to Des Moines River	AqLife	Turbidity	TMDL Required
Unnamed Creek	Unnamed Creek to JD 1	AqLife	Fishes Bioassessments	TMDL Required
			Macroinvertebrate Bioassessments	TMDL Required
Unnamed Creek	T106 R35W S1, west line to Unnamed creek	AqLife	Fishes Bioassessments	TMDL Required
			Macroinvertebrate Bioassessments	TMDL Required
Unnamed Creek	Unnamed Creek to N Fork Watonwan River	AqLife	Fishes Bioassessments	TMDL Required
			Macroinvertebrate Bioassessments	TMDL Required
Cottonwood River	Dry Cr to Mound Cr	AqCons	Mercury in Fish Tissue	TMDL Approved
Watonwan River, South Fork	-94.9121 43.8594 to -94.8475 43.8813	AqLife	Fishes Bioassessments	TMDL Required
Watonwan River	Headwaters to T107 R33W S33, east line	AqLife AqCons AqRec	Fishes Bioassessments	TMDL Required
			Macroinvertebrate Bioassessments	TMDL Required
			Turbidity Mercury in fish tissue	TMDL Required TMDL Required
			Fecal Coliform	TMDL Approved
Watonwan River, North Fork	Headwaters to T107 R32W S6, east line	AqLife	Turbidity Fishes Bioassessments	TMDL Required TMDL Required
		AqRec	Macroinvertebrate Bioassessments E. Coli	TMDL Required TMDL Required
Judicial Ditch 1	Headwater to Irish Lake	AqLife	Fishes Bioassessments Aquatic Macroinvertebrate Bioassessments	TMDL Required
Dutch Charley Creek	Headwaters to Highwater Cr	AqLife AqLife	Fishes Bioassessments Turbidity	TMDL Required TMDL Required
Little Cottonwood River	Headwaters to Minnesota R	AqRec AqLife	Fecal Coliform Turbidity	TMDL Required TMDL Required
			Fishes Bioassessments	TMDL Required
			Aquatic Macroinvertebrate Bioassessments	TMDL Required
Pell Creek	Headwaters to T109 R38W S29, east line	AqLife	Turbidity	Proposed Impairment Under USEPA Review
Bean Lake		AqRec	Nutrient/Eutrophication Biological Indicators	Proposed Impairment Under USEPA Review
Bingham Lake		AqLife AqRec	Fishes Bioassessments Nutrient/Eutrophication Biological Indicators	Proposed Impairment Under USEPA Review
Double Lake	North Portion	AqRec	Nutrient/Eutrophication Biological Indicators	Proposed Impairment Under USEPA Review

Table 3 Continued. Cottonwood County 2016 Impaired Waters Requiring a TMDL				
Name	Stretch	Impaired Use	Impaired Cause	Status
Eagle Lake		AqRec	Nutrient/Eutrophication Biological Indicators	Proposed Impairment Under USEPA Review
Fish Lake	Main	AqLife AqCons	Fishes Bioassessments Mercury in Fish Tissue	TMDL Required TMDL Approved
Mountain Lake		AqCons AqLife	Mercury in Fish Tissue Fishes Bioassessments	TMDL Approved TMDL Required
Talcot Lake		AqRec	Nutrient/Eutrophication Biological Indicators	Proposed Impairment Under USEPA Review

d. Buffers on Public and Other Waters

In 1969, the State of Minnesota enacted the Shoreland Management Act, which directed the Minnesota Department of Natural Resources (MN DNR) to develop standards for those lakes, rivers, and streams located in unincorporated areas in the Minnesota. The law went through multiple updates since then to include surface waters in municipalities, develop lake and river classifications, and other minimum standards. Shoreland rules stipulate that agricultural defined areas are required to maintain a buffer strip of permanent vegetation 50 feet wide from public waters unless there is a developed conservation plan in place and a 16.5 foot (1 rod) buffer on public drainage ditches (MN Statute 103E). Cottonwood County Ordinance #28, section 17 Shoreland Regulations, stipulates that the shore impact zone for land with agricultural uses is a line equal and parallel to 50 feet from the ordinary high water level. In June 2015, the State of Minnesota signed into legislation Minnesota Statute 103F.48, which maintains that farmland cultivation is to maintain a 50 foot average, 30 foot minimum perennial filter strip from the top of the bank on public waters and 16.5 feet on public ditches.

The purpose of a vegetative buffer strip is to “reduce suspended solids and associated contaminants in runoff and excessive sediment in surface water” according to the NRCS Practice 393 for Filter Strips. Schmitt et. al. (1999) found that total suspended solids (TSS) were reduced as much as an average of 83%, nitrogen 38%, and phosphorus 28% on filter strips 15 meters wide (~50 feet). Lee et. al. (1999) also found an average of 77% sediment, 46% total nitrogen, and 52% total phosphorus reduction on filter strips 6 meters (~20 feet) wide. Lee et. al. (1999) also found the effectiveness of filter strips decreased as buffer widths decreased and upland contributing runoff area to buffer ratio increased.

Vegetative buffers separating cropland from bodies of water act as a last line of defense from runoff. These buffers should follow DNR Shoreland Rules and MN Statute 103F.48 of 50 foot on public waters and 16.5 feet on public drainage ditches. Under Statute 103F.48, there are multiple watercourses and basins that are not delineated on the maps as requiring a buffer under this statute, but can be included on an “other waters” list and/or map

provided by the SWCDs to the Local Water Plan authority (Please see Addendum 1 for Cottonwood County Other Waters Map and Definition). For Cottonwood county, these waters included on the “other waters” map are streams or basins that did not meet the statutory definition in the 1980s when the public waters inventory lists were developed by the MN DNR and drain into or out of other public waters that are required to be buffered under statute 103F.48. The Local Water Plan authority highly encourages all areas delineated on the “other waters” map to be buffered at least 30 feet, which is the minimum under the NRCS Practice Standard 393 for filter strips.

Priority Concern 2. Protect Groundwater.

Demand for water resources is expected to continue to grow for the near future. Groundwater is the primary source of drinking water in southwestern Minnesota. The original edition (1991) and first revision (1996) of the Cottonwood County Comprehensive Water Plan contained extensive information on the geology and aquifers of Cottonwood County.

While there are locally important aquifers in Cretaceous sandstones and Precambrian Sioux Quartzite, these deposits typically are high in dissolved minerals (sulfate, iron, manganese). Even when these minerals are within US EPA standards, they may give water an objectionable taste and stain laundry and dishes. Quaternary sand and gravel deposits show higher yields and offer good potential for source water.

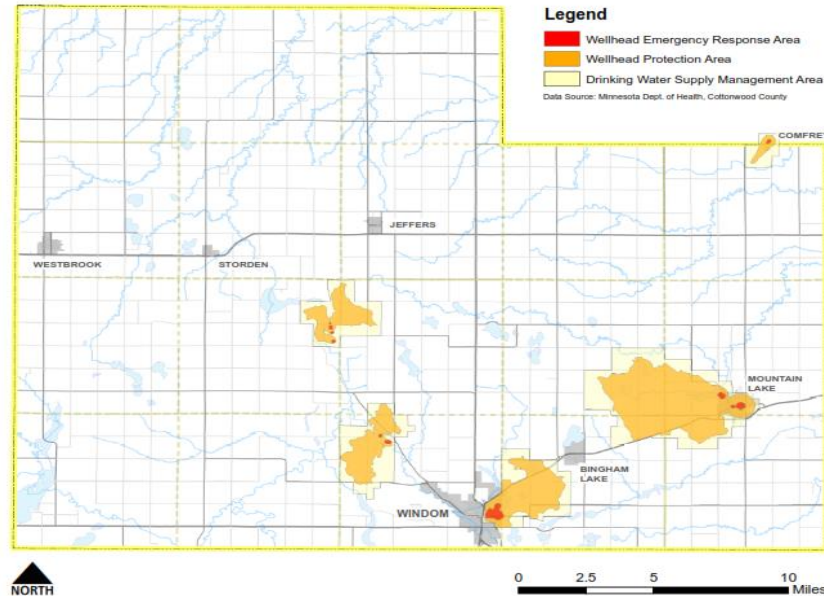
Some aquifers in surficial sand and gravel deposits associated with lakes and river channels show substantial yields, along the Des Moines River where the City of Windom and Red Rock Rural Water System (RRRWS) both have established well fields. These surficial aquifers yield “young water”, with 10-12-year recharge cycles from precipitation. This makes them more susceptible to drought and contamination from both point and non-point sources.

a. Wellhead Protection

The Minnesota Dept. of Health (MDH) Wellhead Protection program is designed to protect public water supply wells. As explained on the MDH website, “A capture zone for the well (called the wellhead protection area) is designated and a plan is developed and implemented for managing potential contamination sources within the wellhead protection area.” A Drinking Water Supply Management Area (DWSMA) provides a geographic focus for securing the water supply. Currently, RRRWS and the cities of Jeffers, Mountain Lake, and Windom are the only public (See Fig. 2 on pg. 20), community water suppliers to complete a Wellhead Protection Plan. The City of Comfrey is currently in MDH’s plan process. Efforts in these areas will move toward implementation of the protection plans, such as education and outreach to landowners and users of land in the DWSMAs.

There are also several other sources in the County which are considered public water suppliers by MDH, such as resorts, restaurants or churches. MDH has completed ground water assessments on 12 of 14 public water systems in the county, including seven non-community systems.

Fig. 3 Cottonwood County Wellhead Protection Areas



On this list, public water is now provided to the unincorporated community of Delft by the Red Rock Rural Water System and to the City of Bingham Lake by the City of Windom.

b. Nitrate and Pesticide Infiltration of Shallow Groundwater

Cottonwood County and the SWCD work regularly with landowners to ensure the proper application of fertilizers and farm chemicals. This is especially important in sensitive areas, particularly those in the floodplain where there is the possibility of spreading overland, and above shallow aquifers where pollutants can infiltrate groundwater.

Proper use of manure management plans and nutrient management plans (see Feedlot section below) places the right amount of chemical on the ground while minimizing unneeded input costs. The *Cottonwood County 2005 Comprehensive Plan*

encourages regular screening clinics for testing private wells for nitrates. This helps alert homeowners to protect their families' health. Since 2012, Cottonwood County has offered free well testing to any Cottonwood County

Year	Coliforms	Nitrate	Lead
2012	70%	87.5%	75%
2013	100%	100%	50%
2014	100%	100%	100%
2015	66%	100%	100%
2016	43%	100%	100%

resident for Fecal Coliforms, Nitrates, and Lead. The table above shows the percentage of tests that met the Minnesota Dept. of Health Drinking Standards (Table 4).

c. Unused Wells

New wells drilled today have an established permitting process, which allows the public to track well locations and characteristics. However, there are an unknown number of wells put in place since settlement that continue to provide pathways for potential pollutants to

reach the county's aquifers. Established farmstead sites are often abandoned as agricultural operations consolidate into larger units and rural residents choose different home locations. Each of these sites typically has a well that needs to be correctly sealed by a licensed contractor. Property owners who connect to rural water systems need to decommission their existing wells if the wells will no longer be used.

Cottonwood County has worked with property owners to see that unused wells are properly sealed. The county offers cost-share assistance as it is able. Public demand for this assistance is likely to continue (Table 5).

d. Long-Term Water Supply

There is growing concern in the county about the quantity and quality of available ground water. With the poor quality of groundwater outside the glacial drift aquifers, the rural water system will be an increasingly important asset for communities, livestock producers and rural residents. The Comprehensive Plan supports development of the Red Rock Rural Water System as an alternative for rural property owners. RRRWS provides service in much of the county, and is expanding the quantity and extent of their residential and industrial services.

Minnesota DNR has tracked water levels for many years. This data indicates strong correlations between rainfall and good levels across Cottonwood County, suggesting potential water supply issues in future times of drought.

Feedlots and ethanol facilities water usage have begun to highlight the need for sustainable, long-term water supplies. An average rural resident may use

Table 5. Cottonwood County Water Plan Wells Sealed with Assistance				
	Wells	Total Cost	Private Cost	Cost-Share
2007	26	\$10,717.00	\$2,739.00	\$7,928.00
2008	37	\$17,482.86	\$3,992.50	\$13,490.36
2009	29	\$13,270.99	\$3,856.96	\$9,414.03
2010	24	\$11,763.75	\$3,921.25	\$7,842.50
2011	20	\$10,677.18	\$3,309.06	\$7,368.12
2012	24	\$15,265.00	\$2,761.25	\$12,503.75
2013	27	\$18,975.00	\$2,760.00	\$14,800.00
2014	32	\$23,397.00	\$12,123.50	\$11,273.50
2015	18	\$13,250.00	\$6,127.50	\$7,122.50
2016	13	\$10,395.00	\$5,427.50	\$4,967.50
Source: County Natural Resources Block Grant				

about 100,000 gallons of potable water a year. An average feedlot may use 1,000,000 gallons of water a year. With current technology, corn-based ethanol refineries use water at an average rate of four-to-six gallons of water per gallon of fuel produced; therefore, a 100-million-gallon plant will require at least 400 million gallons of water each year. Moreover, where potable drinking water supplies must meet basic standards for public safety, ethanol plants require further pre-treatment to remove minerals and chemicals commonly found in groundwater in the region. Two Ethanol Plants in the region (Highwater Ethanol in Redwood County, and Poet Bio-refining in Bingham Lake) have developed alternative water sources to protect and alleviate demand from area water supplies. Highwater Ethanol has developed and implemented a water supply plan that includes using two sources, one from a tile line and the other from a nearby rock quarry. While Poet Bio-refining has developed alternative water supply wells located in Dale Township to lessen the demand from the City of Windom water source.

Further growth in animal agriculture and renewable energy will require careful balancing of interests in economic development and protection for existing residents. New industrial development requires careful planning for infrastructure and utilities. The Comprehensive Plan encourages new development inside city limits. Applicants for new development should document long-term sources of water, and document financial ability to complete extension of infrastructure. Applicants should also document quality of water supply and mitigate any potential detrimental impacts.

Priority Concern 3. Drainage Management

Agricultural drainage is intended to remove standing or excess water from land which does not drain naturally. These systems use surface ditches and subsurface permeable pipes to direct water off the land. As explained by the U of MN Extension Service, "Until the 1970s, most subsurface drainage pipes were made from short, cylindrical sections of concrete or clay called 'tile.' That is why terms like tile, tile drainage, and tiling are still used, even though most drainage pipe today is perforated polyethylene tubing" (*Agricultural Issues and Answers*, <http://www.extension.umn.edu>). Typically, private 'tile' systems then outflow into public ditches and streams.

Agricultural drainage can have unintended consequences on the hydrology and water quality of lake and rivers. Public and private drainage systems provide a direct conduit for transport of pollutants such as nutrients, pesticides, and herbicides to water bodies degrading their recreational, aesthetic, and functional value. In addition, drainage can short-circuit the landscape's water storage potential resulting in flashier river systems with higher peak flows. The higher flows result in bank and channel erosion, as the streams adjust to the increased energy and force. The down-cutting and widening of the channel limits stream access to the natural floodplain, reducing sediment deposition, and increasing sediment transportation.

a. Address drainage management impacts.

Increased tiling has led to changes in the typical hydrograph of regional watersheds. Headwaters are moving upstream as water is brought to the surface earlier - while many lands benefit from tile intakes, another specific property is inundated and may become un-usable. Increased water quantity speeds up water flow as well, with larger peak flows (and subsequent lower off-peak flows) damaging in-stream fish habitat, stream-banks and wetlands.

Modern, comprehensive drainage management can provide the private and public tools to stabilize the effects of both wet and dry weather cycles, reduce soil erosion, and improve water quality, while also providing additional benefits to wildlife habitat. Research continues the optimal combination of strategies such as variable depth tilling, drainage structures and controlled intakes. As one example, the Minnesota Corn Growers Association has joined with the national Agricultural Drainage Management Coalition to promote the wider use of comprehensive approaches to drainage. Locally, the SWCD and HLWD have been promoting Alternative Tile Intakes. Per the Watershed District, these systems have been demonstrated in Minnesota to deliver “adequate drainage capacity and a 50% reduction of sediment and phosphorus loading to subsurface tile lines.”

b. Develop a comprehensive Multi-Purpose Drainage Management Plan

It is recommended that the County develop a comprehensive Multi-Purpose Drainage Management Plan (DMP) that addresses present and future drainage needs as well as methods to mitigate the unintended consequences as described above. The County drainage authority will review the DMP when a petition to improve a public drainage system is requested and consider options for mitigating increases in flow volume. A concerted effort by local decision makers, local and state agencies and landowners will be necessary to ensure sufficient drainage for crop production while maintaining and improving Cottonwood County water quality. High priority areas will include impaired water bodies and reaches of impaired water bodies on the Clean Water Act 303 [d] TMDL List, through any area with high resource value waters should be considered.

c. Create more short-term and long-term water storage.

Area II Minnesota River Basin Projects, Inc. is a local grant-in-aid organization which provides financial and technical assistance to member counties for the planning, design, and installation of floodwater retarding/retention projects. Per the Area II website “Ten reservoirs

have been constructed since 1978, with several providing multi-purpose functions as county park and recreation areas. Besides the larger structures, Area II has assisted with the installation of many road retention structures which serve as temporary reservoirs that 'meter' out the floodwaters at controllable velocities and volumes."

Development activity in flood-prone areas should be avoided. For example, high risk areas could receive a permanent vegetative cover to help alleviate erosion and sedimentation caused by flooding. Some communities have adopted a No Adverse Impact (NAI) floodplain management approach, which extends beyond the floodplain to manage development in the watersheds where flood waters originate. NAI requires new development to mitigate potential impacts before disaster strikes.

Priority Concern 4. Feedlots & SSTS (Sub-Surface Sewage Treatment Systems).

Development in rural communities is a process of balancing interests. The majority of land in Cottonwood County is in agriculture. Feedlot expansion has, at times, created conflicts with nearby residents. Residential development itself can lead to conflicts with established agricultural operations, waters and wildlife. Cottonwood County seeks to provide opportunities for housing in both town and country, but that development must fit into working landscapes and natural areas.

a. Feedlot Conformance with State Standards

The total number of farms in the county has been declining to stable, like trends across southwestern Minnesota. The 2012 U.S. Census of Agriculture reports 759 farms on 336,445 acres in Cottonwood County. Of these, 319,658 acres were harvested cropland. There were 165 farms with cattle, 122 with hogs, and 26 with sheep.

The *Cottonwood County 2005 Comprehensive Plan* supports the right to farm. The Plan also states that the County must carefully control the location of feedlots and other animal confinement operations to minimize the potential for pollution. Animal agriculture creates manure which must be safely managed. Trends in feedlot management, such as changing demographics; market trends for feed, beef and pork; and economics of fertilizer will affect growth in the industry. Population growth in some townships, however, may also lead to future land use conflicts with feedlots and manure management.

Nutrient management programs are intended to prevent and mitigate non-point nutrient contamination of water and soil resources. This is particularly important in areas with a great deal of surface runoff, as well as surficial aquifer areas. Technical assistance from county staff can help farm operators understand the variety of rules and regulations, which can be confusing and seemingly contradictory. While larger operations are required

to develop formal management plans, more modest feedlots can also benefit from the same sound scientific management principles.

MPCA regulates the collection, transportation, storage, processing and disposal of animal manure. As of March 2017, there are 257 registered feedlots in Cottonwood County. Total number of animals for Cottonwood County is 36,354 beef, 7,533 dairy, 272,641 swine and 309,624 turkeys. Approximately 30% of registered feedlots and other livestock facilities should be considered high priority for improvements. As noted above, the County continues to implement Agricultural Best Management Practices (AgBMPs) in conjunction with the Minnesota Department of Agriculture, such as feedlot improvements; upgrading manure storage facilities, and odor control; improved manure handling, and spreading and incorporation equipment. Also, cost-share is available through the EQIP program and special Clean Water Fund grant opportunities. In addition, Cottonwood County, has partnered with the HLWD to complete a Level III Feedlot Inventory in the WFDNR Watershed with 70 sites being completed in Cottonwood County between 2012-2016.

b. SSTS Compliance with State Standards

Sub-Surface Sewage Treatment Systems (SSTS) can provide a high degree of sewage treatment if properly sited, installed and maintained. State legislation governing SSTS is implemented at the county level.

Failing and nonconforming treatment systems are considered an imminent threat to public health or failing to protect groundwater.

These systems can spread hepatitis, dysentery and other diseases that are spread by bacteria, viruses and parasites in wastewater. Untreated sewage also may contain toxic chemicals from household cleaning products. This wastewater can directly enter surface waters and spread to unsuspecting humans, as well as pets and wildlife. Excess nutrients reaching lakes or streams will also promote algae growth, making lakes unsuitable for swimming, boating and fishing. Over time, wastewater will reach down to groundwater as well.

Many communities are relying more on engineered treatment systems; however, there does not appear to be a consensus supporting increased requirements in Southwestern Minnesota. Another option for treatment is a regional sewer district, which functions much the same as rural water systems. A central entity, often a non-profit organization or the incumbent water supplier, organizes construction of sewer collection and treatment facilities and provides annual maintenance, and in return collects payment on a utility fee-for-service basis.

The *Cottonwood County 2005 Comprehensive Plan* discourages development in areas where poor soil characteristics may not support SSTS systems, and

encourages property owners to upgrade septic systems. The plan also calls for enforcement of standards for on-site sewage treatment systems of all types. Cottonwood County has a successful record of assisting landowners to upgrade their septic systems through a low-interest loan program. Public interest in assistance is expected to continue.

In April 2013, the Cottonwood County septic ordinance was updated to reflect current rule changes as required by the State of Minnesota. This update included a more encompassing property transfer definition in regard to septic system compliance inspections, which has led to an increase in overall existing compliance inspections in the county. From 2013 – 2016 ninety-two existing compliance inspections were completed by licensed contractors in the county and 117 failing systems were replaced in that time as well.

B.3 Goals and Objectives to Address Priority Concerns

The Goals and Objectives were selected in the 2016 Local Water Management Plan process. The Water Task Force worked on a watershed basis through each Priority Concern for each of the watersheds in Cottonwood County. Goals are general statements that communicate what is to be accomplished over the long-term to address the priority concerns and are achievable in a reasonable period. Objectives state how the goal will be accomplished by breaking it down into smaller, more specific measures that will be taken in each watershed and are measurable. Goals and objectives were reached by consensus and are not necessarily in rank order.

Priority Concern 1. Improve Surface Water Quality.

- Goal 1: Prevent further degradation of stream and lake water quality.
- Objective 1.a: Protect soil from erosion and prevent agricultural runoff.
 - Objective 1.b: Wetland restoration and management.
 - Objective 1.c: Address TMDL Impaired Waters.
 - Objective 1.d: Buffers on Public and Other waters.

Priority Concern 2. Protect Groundwater.

- Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management Areas (DWSMA) and surficial aquifer areas.
- Objective 2.a: Support Well Head Protection planning and implementation.
 - Objective 2.b: Prevent nitrate and pesticide infiltration of shallow groundwater.
 - Objective 2.c: Prevent groundwater contamination from unused wells.
 - Objective 2.d: Protect long-term water supply.

Priority Concern 3. Drainage Management

- Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems
- Objective 3.a: Address negative impacts of drainage management.
 - Objective 3.b: Develop a comprehensive Multi-Purpose Drainage Management Plan.
 - Objective 3.c: Create more short-term and long-term water storage.

Priority Concern 4. Feedlots & SSTS

- Goal 4: Protect public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety situations.
- Objective 4.a: Assist feedlot owners to maintain compliance with MN Statute 7020 standards.
 - Objective 4.b: Continue to bring nonconforming ISTS into compliance with state standards.

Goals and Objectives for each Priority Concern will be completed by Watershed to allow for the easy removal by the One Watershed One Plans completed for Cottonwood County.

Watersheds will be in the alphabetical order as follows:

Cottonwood and Little Cottonwood River Watersheds
Des Moines River Watershed
Watsonwan and Blue Earth River Watersheds

C. Implementation to Address Priority Concerns (Cottonwood and Little Cottonwood River Watersheds)

This section establishes the implementation program for local water management to address priority concerns by watersheds. Action items describe specific measures that the County intends to implement, in cooperation with appropriate local, state and federal agencies and organizations. Action items listed below were reached by consensus and are not necessarily in rank order.

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 1. Improve Surface Water Quality				
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County				
Objective 1.a Protect Soil from Erosion and Prevent Agricultural Runoff.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
1.a.1	Assist with coordination and funding of environmental education events for the students of the watershed. These include (but not limited to) Children’s Water Festival and Environmental Fair. Target Audience – 500 students/year; \$500/year	County Land Management, SWCD, NRCS, RCRCA, USF&WS, RRRWS, DNR	2017-2027	5,000 students \$5,000.00
1.a.2	Assist with coordination and funding of educational events centered on soil health and sustainable agricultural practices. Target Audience – 500 landowners-operators/year; \$5,000/year	SWCD County Land Management NRCS, RCRCA	2017-2027	5,000 landowners \$50,000.00
1.a.3	Educate landowners on lakeshore and streambank stabilization practices. Technology – website Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 500 landowners/year; \$2,000/year	County Land Management SWCD MN DNR	2017-2027	5,000 contacts \$20,000.00
1.a.4	Promote and seek funding for soil health and sustainable practices such as cover crops, nutrient management, minimal tillage, grazing management, and other new and innovative practices. Target Audience – 100 landowners/year; 80 acres/landowner - \$400,000/year	SWCD County Land Management NRCS, MDA	2017-2027	1,000 landowners \$4,000,000.00
1.a.5	Promote conservation practices and programs to landowners in the watershed. These include State Cost-Share, RIM, ACEP, CRP, CREP, EQIP, CSP and others. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 2,000 landowners/year – 100 sign-ups/year; \$6,000/year	SWCD, County Land Management, NRCS, RCRCA, FSA	2017-2027	20,000 contacts 1,000 sign-ups \$60,000.00
1.a.6	Promote, assist and seek funding to reduce the amount of wind erosion by planting field windbreak, living snow fences and farmstead windbreaks. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 0.5 miles windbreaks and 2 acres shelterbelts/year; \$5,000/year	SWCD NRCS	2017-2027	5 miles 20 acres \$50,000.00
1.a.7	Promote, assist and seek funding to reduce erosion by installing eligible streambank and lakeshore stabilization projects. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 practices/year; \$50,000/year	SWCD County Land Management NRCS RCRCA, TSA	2017-2027	100 practices \$500,000.00

1.a.8	Promote, assist and seek funding for the installation of grass waterways and water and sediment control basins. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 5 projects/year; \$20,000.00/year	SWCD NRCS RCRCA TSA	2017-2027	50 projects \$200,000.00
1.a.9	Promote enrollment in the Minnesota Agricultural Water Quality Certification Program through the Minnesota Department of Agriculture. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 producers/year; \$2,000/year	SWCD NRCS MDA TSA	2017-2027	100 producers \$20,000.00
1.a.10	Follow up with Soil Erosion Law complaints and assist landowners to mitigate any documented excessive soil erosion issues. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Staff - \$5,000; 5 Complaints/year, \$30,000 for practices per complaint	SWCD, TSA County Land Management NRCS, BWSR, MDA, RCRCA County Attorney	2017-2027	50 Complaints Staff/practices \$1,550,000.00
1.a.11	Utilize GIS and modeling software to prioritize, target, and measure the placement of BMPs on the landscape to improve water quality. Technology – Database development Staff - \$5,000.00; targeting tools - \$2,000/year	SWCD County Land Management TSA, Private Consultant	2017-2027	Staff \$50,000.00 Tools \$20,000.00
1.a.12	Educate Certified Crop Advisers and Agricultural Groups on the goals and objectives of the Cottonwood County Water Plan. Technology – website Outreach - news releases, USDA Update, personal contacts, websites, email updates Target Audience – 10 Crop Advisers/year;	SWCD, County Land Management	2017-2027	100 Crop Advisers

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 1. Improve Surface Water Quality				
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County				
Objective 1.b Wetland Restoration and Management.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
1.b.1	Provide technical assistance to the Wetland Conservation Act Technical Evaluation Panel (TEP) to minimize the amount of wetland acres lost county wide. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 1,500 landowner and operators/year	SWCD NRCS County Land Management DNR	2017-2027	15,000 contacts \$0.00
1.b.2	Work with DNR and USF&WS to expand or enhance wetland in existing wildlife areas. Educate landowners on the benefits of converting drained wetlands back to a permanent native vegetated state, using RIM, ACEP, CREP, and CRP or other long term conservation program. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 1,500 landowners and operators/year	SWCD NRCS DNR USF&WS FSA TSA	2017-2027	15,000 contacts \$0.00

1.b.3	Promote, assist and seek funding to enroll marginal land into available wetland restoration programs including RIM, ACEP, CREP, and CRP or other long term conservation program. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 1,500 landowners and operators/year Enrollment – 50 contracts /year; \$100,000/year	SWCD County Land Management NRCS FSA	2017-2027	500 contracts \$1,000,000.00
-------	--	---	-----------	---------------------------------

Goals and Objectives					Cottonwood and Little Cottonwood River Watersheds				
Priority Concern 1. Improve Surface Water Quality									
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County									
Objective 1.c Address TMDL Impaired Waters.									
Watershed	Action	Responsibility	Time Frame	Total Units/Cost					
1.c.1	Provide public information on water quality. Outreach – Booths and Displays at County Fair, Farm & Home Shows, others, websites Audience – 2,000 landowners, operators and residents /year; \$600/year	SWCD County Land Management	2017-2027	20,000 contacts \$6,000.00					
1.c.2	Provide technical, administrative assistance to MPCA on scheduled watershed studies. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 2,000 residents/year	SWCD County Land Management RCRCA, MPCA	2017-2027	20,000 contacts \$0.00					
1.c.3	Work with the TMDL/WRAPS Implementation Plan for the watershed and hiring technical staff to promote conservation efforts in the watershed. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 2,000 landowners-operators and one FTE technical staff/year; \$50,000/year	SWCD County Land Management RCRCA MPCA	2017-2027	20,000 contacts 1 staff-10 years \$500,000.00					

Goals and Objectives					Cottonwood and Little Cottonwood River Watersheds				
Priority Concern 1. Improve Surface Water Quality									
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County									
Objective 1.d Buffers on Public and Other Waters									
Watershed	Action	Responsibility	Time Frame	Total Units/Cost					
1.d.1	Promote, assist and seek funding to enroll riparian land into a perpetual buffer program. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 50 acres/year; \$10,000/year	SWCD, NRCS County Land Management, RCRCA	2017-2027	500 acres \$100,000.00					

1.d.2	Promote the use of buffer strips along ditches, streams and lakes within the watershed utilizing available conservation programs and incentives. Technology – LiDAR, Stream Power Index, others Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 300 landowners/year; \$2,000/year	SWCD NRCS County Land Management FSA TSA	2017-2027	3,000 contacts \$20,000.00
1.d.3	Promote, assist and seek funding for eligible acres enrolling into a buffer strip program along ditches, streams and lakes. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 25 acres/year; \$5,000/year	SWCD NRCS County Land Management RCRCA, FSA	2017-2027	250 acres \$50,000.00
1.d.4	Promote and encourage landowners to install a minimum of 30 ft. of perennial vegetated buffers on water courses and basins as identified on the Other Waters Inventory Map. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 40 parcels/year; \$2,000/year	SWCD County Land Management FSA, NRCS	2017-2027	400 parcels \$20,000.00
1.d.5	Promote, assist and seek funding for eligible acres enrolling into a buffer strip program along water courses and basins identified on the Other Waters Inventory Map. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 acres/year; \$2,000/year	SWCD County Land Management FSA, NRCS	2017-2027	100 acres \$20,000.00

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management				
Areas (DWSMA) and surficial aquifer areas.				
Objective 2.a Support Wellhead Protection Planning and Implementation.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.a.1	Assist Comfrey with completing and implementing their Wellhead Protection Plan and amendments. Outreach – Direct mailings and personal contacts, websites Audience – Contact City Department heads/year	SWCD County Land Management City of Comfrey MDH, RRRWS	2017-2027	City Officials \$0.00
2.a.2	Educate landowners and residents on DWSMAs and measures to protect the groundwater. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 100 landowners-residents/year	SWCD County Land Management Cities RRRWS	2017-2027	1,000 contacts \$0.00
2.a.3	Protect DWSMA and surficial aquifer areas from agricultural and industrial contamination through zoning ordinances. Manure management plans to be completed and followed in DWSMA and surficial aquifers. Outreach – Direct mailings and personal contacts, websites Audience – 10 landowners, \$1,000/year	SWCD County Land Management MDH	2017-2027	100 contacts \$10,000.00

2.a.4	Make available to the public the MDH wellhead protection areas through the county GIS. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience –20 landowners-residents/year	SWCD County Land Management MDH	2017-2027	100 contacts \$0.00
2.a.5	Promote, assist and seek funding to enroll eligible acres (highly vulnerable wellhead areas) into the RIM Wellhead Protection Program and CREP. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enroll – 5 acres/year; \$1,000/year	SWCD NRCS FSA	2017-2027	50 acres \$10,000.00

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management				
Areas (DWSMA) and surficial aquifer areas.				
Objective 2.b Prevent Nitrate and Pesticide Infiltration of Groundwater with Emphasis on Shallow Groundwater areas.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.b.1	Promote proper application of fertilizers and pesticides and partner with local crop consultants to provide an informational field day on a bi-annual basis. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 100 landowners; \$2,000/year	SWCD County Land Management Local Crop Consultants NRCS	2017-2027	1,000 contacts \$20,000.00
2.b.2	Promote AgBMPs along ditches and streams in surficial aquifer areas. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 50 landowners/year; \$500/year	SWCD County Land Management MPCA, TSA	2017-2027	500 contacts \$5,000.00
2.b.3	Conduct annual free testing of nitrate, fecal coliform, and lead levels in well water. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 500 county residents/year; \$800/year for testing	SWCD County Land Management MDH, MDA	2017-2027	5,000 contacts \$8,000.00
2.b.4	Promote, assist and seek funding to assist landowners and operators with nutrient management plans. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Plans – 10 plans/year; \$20,000/year	SWCD County Land Management MPCA NRCS	2017-2027	100 plans \$200,000.00

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management				
Areas (DWSMA) and surficial aquifer areas.				
Objective 2.c Prevent Groundwater Contamination from Unused Wells				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.c.1	Work with well contractors to promote proper well protection and sealing. Outreach – Direct mailings and personal contacts, websites Audience – Well Contractors; \$50/year	SWCD County Land Management RRRWS, Cities	2017-2027	Well Contractors \$500.00
2.c.2	Provide information to County residents concerning proper well protection and sealing programs. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – Residents; \$500/year	SWCD County Land Management RRRWS Cities	2017-2027	Residents \$5,000.00
2.c.3	Promote, assist and seek funding to prevent contamination of groundwater by providing cost-share for the sealing of unused wells. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 wells/year; \$5,250/year	SWCD County Land Management	2017-2027	100 wells \$52,500.00

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management				
Areas (DWSMA) and surficial aquifer areas.				
Objective 2.d Protect Long-Term Water Supply				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.d.1	Support water conservation by using existing educational materials. Outreach – Direct mailings, news releases, USDA Update, personal contacts, special programs, displays, websites Audience – 2,000 county residents/year; \$500/year	SWCD County Land Management RRRWS Cities, MDH	2017-2027	20,000 contacts \$5,000.00
2.d.2	Protect long-term water supply by enforcing zoning ordinances through Conditional Use Hearings for municipal, industrial, irrigation and public water supply wells. Outreach – Direct mailings, personal contacts, websites Audience – Planning Commission, Cities, Water Suppliers, landowners; \$50/year	County Land Management DNR MDH Cities	2017-2027	County Residents Planning Commission \$500.00

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 3. Drainage Management				
Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems				
Objective 3.a Address Impacts of Drainage Management.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
3.a.1	Promote conservation drainage practices in the watershed. Seek incentive funds and cost-share to assist producers with the installation of conservation drainage practices. These practices include alternative tile intakes, structures to control tile drainage, saturated buffers, storage & treatment wetlands, alternative side-inlets, bioreactors and new and innovative practices. High priority areas would include impaired water bodies and reaches of impaired water bodies. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment - 10 practices/year; \$100,000.00/year	SWCD NRCS RCRCA TSA	2017-2027	100 BMPs \$1,000,000.00
3.a.2	Promote, assist and seek funding for the installation of grass waterways and water and sediment control basins. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 5 projects/year; \$20,000.00/year	SWCD NRCS RCRCA TSA	2017-2027	50 projects \$200,000.00
3.a.3	Promote and seek funding for the installation of alternative tile intakes. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 50/year; \$50,000/year	SWCD County Land Management NRCS, RCRCA, TSA	2017-2027	500 intakes \$500,000.00
3.a.4	Promote, assist and seek funding for the installation of Urban BMPs, to individuals and the communities of Jeffers, Storden, Comfrey, and Westbrook as found in the MN Stormwater Manual. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 4 BMPs/year; \$5,000/year	SWCD County Land Management Cottonwood County Highway Area II River Basin Inc., TSA Cities	2017-2027	40 BMPs \$50,000.00

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 3. Drainage Management				
Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems				
Objective 3.b Develop a Comprehensive Multi-Purpose Drainage Management Plan				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost

3.b.1	Develop a Comprehensive Multi-Purpose Drainage Management Plan (DMP) that addresses present and future drainage needs as well as methods to mitigate the unintended consequences of agricultural drainage on water quality and quantity. Hire Drainage staff to work with the SWCD to investigate and direct resources to assist the County Drainage Authority. Technology – Data collection, drainage database Research – Compiling information and data Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – Cottonwood County Drainage Authority and Watershed residents Plan Development - \$100,000	SWCD County Land Management, County Auditor/Treasurer's Office and other County Departments, NRCS RRRWS, RCRC, USF&WS, MPCA, DNR, County Drainage Authority, other LGUs	2017-2027	Watershed Residents \$100,000.00
3.b.2	Investigate existing information of all public drainage systems and develop a GIS layer of all public drainage systems in Cottonwood County. Technology – GIS, drainage database Target Audience – Cottonwood County Drainage Authority and Watershed Residents	County Land Management County Auditor/Treasurer's Office SWCD	2017-2027	Watershed Residents \$50,000.00
3.b.3	Develop an inventory of digital dams to hydro-condition the DEM to better model the flow of surface water. Technology – Culvert Inventory, targeting programs One-time activity - \$20,000; annual maintenance - \$500/year	SWCD County Land Management TSA Private Contractor	2017-2027	\$25,000.00

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 3. Drainage Management				
Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems				
Objective 3.c Create more short-term and long-term water storage.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
3.c.1	Work with Area II River Basin Initiative to identify areas for water retention projects.	SWCD	2017-2027	35 contacts \$0.00
	Outreach - Direct mailings, news releases, USDA Update, personal contacts. Target Audience – 7 landowners/year	County Land Management Cottonwood County Highway Area II River Basin Inc., TSA		
3.c.2	Implement water storage practices including retention and detention basins, in-ditch storage, storage and treatment wetlands, ponds, earthen dams, and other new and innovative practices. 1 project/year, \$200,000/year	SWCD NRCS Area II River Basin Inc. TSA	2017-2027	10 projects \$2,000,000.00

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 4. Feedlots and SSTs				
Goal 4: Protect public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety situations.				
Objective 4.a Assist Feedlot Owners to Maintain Compliance with MN Rule 7020 Standards.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
4.a.1	Conduct annual meetings with Township Officials to promote AgBMPs for livestock producers. Outreach – Direct mailings and personal contacts, websites Audience – 40 township officials/year	County Land Management SWCD	2017-2027	400 contacts \$0.00
4.a.2	Inspect 7% of all registered feedlots per year to verify compliance with MN Statute 7020. Outreach – Direct mailings and personal contacts, websites Audience – Feedlot Owners and Operators 6 inspections/year; \$1,000/year	SWCD County Land Management	2017-2027	60 inspections \$10,000.00
4.a.3	Continue Tempo reporting for registered feedlots in the watershed. Outreach - Personal contacts, websites Technology – Feedlot database Audience – Feedlot Owners and Operators 80 records/year Staff, \$5,000/year	SWCD County Land Management	2017-2027	800 records Staff \$50,000.00
4.a.4	Promote, assist and seek implementation funding through EQIP, State Cost-Share and Clean Water Fund for livestock waste management BMPs. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 5 BMPs/year; \$500,000/year	SWCD NRCS RCRCA, TSA	2017-2027	50 BMPs \$5,000,000.00
4.a.5	Promote, assist and seek funding for livestock producers with feedlots containing 300-999 animal units to develop and maintain a manure management plan. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Plans – 10 plans/year; \$30,000/year	SWCD County Land Management	2017-2027	100 plans \$300,000.00

Goals and Objectives		Cottonwood and Little Cottonwood River Watersheds		
Priority Concern 4. Feedlots and SSTS				
Goal 4: Protect public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety situations.				
Objective 4.b Continue to bring Nonconforming SSTS into Compliance with State Standards.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
4.b.1	Promote, assist and seek funding to upgrade non-compliant systems through qualifying loan programs. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 20 systems/ year; \$300,000/year	SWCD County Land Management MPCA, MDA RCRCA	2017-2027	200 systems \$3,000,000.00
4.b.2	Provide an informational packet regarding SSTS maintenance to every homeowner that installs a new or upgraded system Outreach - personal contacts, websites Audience – 20 homeowners/year; \$200/year	SWCD County Land Management MPCA	2017-2027	200 contacts \$2,000.00
4.b.3	Develop a GIS layer for all septic systems in the County. Technology – Computer, software, SSTS database, website Staff; \$5,000/year	SWCD County Land Management	2017-2027	Staff \$50,000.00
4.b.4	Provide information on state SSTS rules and educate property owners about the public health threats and environmental harm posed by non-complying systems. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 3,700 homeowners/year; \$500.00/year	SWCD County Land Management RRRWS	2017-2027	37,000 contacts \$5,000.00
4.b.5	Keep public informed on the Cottonwood County SSTS Ordinance. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 3,000 county residents/year; \$500.00/year	SWCD County Land Management MPCA	2017-2027	15,000 contacts \$1,500.00
4.b.6	Promote, assist and seek funding to bring unsewered homes into compliance. Outreach - Direct mailings and personal contacts, websites Audience – 1 Homeowner, \$20,000/year	SWCD County Land Management RCRCA, MPCA, MDH	2017-2027	10 Homeowners \$200,000.00
4.b.7	Consider a systematic approach to inspect and upgrade all SSTS in the watershed. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites. 300 inspections/upgrades; Per upgrade: \$15,000 total cost, \$5,000 cost-share Enforcement	SWCD County Land Management MPCA County Attorney	2017-2027	\$1,500,000.00

C. Implementation to Address Priority Concerns (Des Moines River Watershed)

This section establishes the implementation program for local water management to address priority concerns by watersheds. Action items describe specific measures that the County intends to implement, in cooperation with appropriate local, state and federal agencies and organizations. Action items listed below were reached by consensus and are not necessarily in rank order.

Goals and Objectives			Des Moines River Watershed	
Priority Concern 1. Improve Surface Water Quality				
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County				
Objective 1.a Protect Soil from Erosion and Prevent Agricultural Runoff.				
Watershed	Action	Responsibility	Time Frame	Total Units/ Cost
1.a.1	Assist with coordination and funding of environmental education events for the students of the watershed. These include (but not limited to) Children's Water Festival and Environmental Fair. Target Audience – 1,000 students/year; \$1,000/year	County Land Management, SWCD, NRCS, USF&WS, RRRWS, DNR	2017-2027	10,000 students \$10,000.00
1.a.2	Assist with coordination and funding of educational events centered on soil health and sustainable agricultural practices. Target Audience – 500 landowners-operators/year; \$5,000/year	SWCD County Land Management NRCS, HLWD	2017-2027	5,000 landowners \$50,000.00
1.a.3	Educate landowners on lakeshore and streambank stabilization practices. Technology – website Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 500 landowners/year; \$2,000/year	County Land Management SWCD MN DNR HLWD	2017-2027	5,000 contacts \$20,000.00
1.a.4	Promote and seek funding for soil health and sustainable practices such as cover crops, nutrient management, minimal tillage, grazing management, and other new and innovative practices. Target Audience – 100 landowners/year; 80 acres/landowner - \$400,000/year	SWCD County Land Management NRCS, MDA HLWD	2017-2027	1,000 landowners \$4,000,000.00
1.a.5	Promote conservation practices and programs to landowners in the watershed. These include State Cost-Share, RIM, ACEP, CRP, CREP, EQIP, CSP and others. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 2,000 landowners/year – 100 sign-ups/year; \$6,000/year	SWCD, County Land Management, NRCS, FSA HLWD	2017-2027	20,000 contacts 1,000 sign-ups \$60,000.00
1.a.6	Promote, assist and seek funding to reduce the amount of wind erosion by planting field windbreak, living snow fences and farmstead windbreaks. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 0.5 miles windbreaks and 2 acres shelterbelts/year; \$5,000/year	SWCD NRCS	2017-2027	5 miles 20 acres \$50,000.00
1.a.7	Promote, assist and seek funding to reduce erosion by installing eligible streambank and lakeshore stabilization projects. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 practices/year; \$50,000/year	SWCD County Land Management NRCS TSA, HLWD	2017-2027	100 practices \$500,000.00

1.a.8	Promote, assist and seek funding for the installation of grass waterways and water and sediment control basins. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 5 projects/year; \$20,000.00/year	SWCD NRCS TSA HLWD	2017-2027	50 projects \$200,000.00
1.a.9	Promote enrollment in the Minnesota Agricultural Water Quality Certification Program through the Minnesota Department of Agriculture. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 producers/year; \$2,000/year	SWCD NRCS MDA TSA	2017-2027	100 producers \$20,000.00
1.a.10	Follow up with Soil Erosion Law complaints and assist landowners to mitigate any documented excessive soil erosion issues. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Staff - \$5,000; 5 Complaints/year, \$30,000 for practices per complaint	SWCD, TSA County Land Management NRCS, BWSR, MDA County Attorney	2017-2027	50 Complaints Staff/practices \$1,550,000.00
1.a.11	Utilize GIS and modeling software to prioritize, target, and measure the placement of BMPs on the landscape to improve water quality. Technology – Database development Staff - \$5,000.00; targeting tools - \$2,000/year	SWCD County Land Management TSA, Private Consultant	2017-2027	Staff \$50,000.00 Tools \$20,000.00
1.a.12	Educate Certified Crop Advisers and Agricultural Groups about the goals and objectives of the County Water Plan Technology – website Outreach – email updates, news releases, USDA Update, personal contacts, websites Target Audience 10 Certified Crop Advisers/year;	SWCD, County Land Management	2017-2027	100 Certified Crop Advisers

Goals and Objectives

Des Moines River Watershed

Priority Concern 1. Improve Surface Water Quality

Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County

Objective 1.b Wetland Restoration and Management.

Watershed	Action	Responsibility	Time Frame	Total Units/Cost
1.b.1	Provide technical assistance to the Wetland Conservation Act Technical Evaluation Panel (TEP) to minimize the amount of wetland acres lost county wide. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 1,500 landowner and operators/year	SWCD NRCS County Land Management DNR	2017-2027	15,000 contacts \$0.00
1.b.2	Work with DNR and USF&WS to expand or enhance wetland in existing wildlife areas. Educate landowners on the benefits of converting drained wetlands back to a permanent native vegetated state, using RIM, ACEP, CREP, and CRP or other long term conservation program. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 1,500 landowners and operators/year	SWCD NRCS DNR USF&WS FSA TSA, HLWD	2017-2027	15,000 contacts \$0.00
1.b.3	Promote, assist and seek funding to enroll marginal land into available wetland restoration programs including RIM, ACEP, CREP, and CRP or other long term conservation program. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 1,500 landowners and operators/year Enrollment – 50 contracts /year; \$100,000/year	SWCD County Land Management NRCS FSA HLWD	2017-2027	500 contracts \$1,000,000.00

Goals and Objectives		Des Moines River Watershed		
Priority Concern 1. Improve Surface Water Quality				
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County				
Objective 1.c Address TMDL Impaired Waters.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
1.c.1	Provide public information on water quality. Outreach – Booths and Displays at County Fair, Farm & Home Shows, others, websites Audience – 2,000 landowners, operators and residents /year; \$600/year	SWCD County Land Management HLWD	2017-2027	20,000 contacts \$6,000.00
1.c.2	Provide technical, administrative assistance to MPCA on scheduled watershed studies. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 2,000 residents/year	SWCD County Land Management HLWD, MPCA	2017-2027	20,000 contacts \$0.00
1.c.3	Work with the TMDL/WRAPS Implementation Plan for the watershed and hiring technical staff to promote conservation efforts in the watershed. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 2,000 landowners-operators and one FTE technical staff/year; \$50,000/year	SWCD County Land Management HLWD MPCA	2017-2027	20,000 contacts 1 staff-10 years \$500,000.00

Goals and Objectives		Des Moines River Watershed		
Priority Concern 1. Improve Surface Water Quality				
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County				
Objective 1.d Buffers on Public and Other Waters				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
1.d.1	Promote, assist and seek funding to enroll riparian land into a perpetual buffer program. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 50 acres/year; \$10,000/year	SWCD, NRCS County Land Management, HLWD	2017-2027	500 acres \$100,000.00
1.d.2	Promote the use of buffer strips along ditches, streams and lakes within the watershed utilizing available conservation programs and incentives. Technology – LiDAR, Stream Power Index, others Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 300 landowners/year; \$2,000/year	SWCD NRCS County Land Management FSA TSA, HLWD	2017-2027	3,000 contacts \$20,000.00
1.d.3	Promote, assist and seek funding for eligible acres enrolling into a buffer strip program along ditches, streams and lakes. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 25 acres/year; \$5,000/year	SWCD NRCS County Land Management HLWD, FSA	2017-2027	250 acres \$50,000.00
1.d.4	Promote and encourage landowners to install a minimum of 30 ft. of perennial vegetated buffers on water courses and basins as identified on the Other Waters Inventory Map. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 40 parcels/year; \$2,000/year	SWCD County Land Management FSA, NRCS	2017-2027	400 parcels \$20,000.00

1.d.5	Promote, assist and seek funding for eligible acres enrolling into a buffer strip program along water courses and basins identified on the Other Waters Inventory Map. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 acres/year; \$2,000/year	SWCD County Land Management FSA, NRCS	2017-2027	100 acres \$20,000.00
-------	---	---	-----------	--------------------------

Goals and Objectives		Des Moines River Watershed		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management				
Areas (DWSMA) and surficial aquifer areas.				
Objective 2.a Support Wellhead Protection Planning and Implementation.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.a.1	Assist the Cities of Windom and Jeffers and Red Rock Rural Water Systems with completing and implementing their Wellhead Protection Plans and amendments. Outreach – Direct mailings and personal contacts, websites Audience – Contact City Department heads/year	SWCD County Land Management City of Windom, Jeffers MDH, RRRWS	2017-2027	City Officials \$0.00
2.a.2	Educate landowners and residents on DWSMAs and measures to protect the groundwater. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 100 landowners-residents/year	SWCD County Land Management Cities RRRWS	2017-2027	1,000 contacts \$0.00
2.a.3	Protect DWSMA and surficial aquifer areas from agricultural and industrial contamination through zoning ordinances. Manure management plans to be completed and followed in DWSMA and surficial aquifers. Outreach – Direct mailings and personal contacts, websites Audience – 10 landowners, \$1,000/year	SWCD County Land Management MDH	2017-2027	100 contacts \$10,000.00
2.a.4	Make available to the public the MDH wellhead protection areas through the county GIS. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 20 landowners-residents/year	SWCD County Land Management MDH	2017-2027	100 contacts \$0.00
2.a.5	Promote, assist and seek funding to enroll eligible acres (highly vulnerable wellhead areas) into the RIM Wellhead Protection Program and CREP. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enroll – 5 acres/year; \$1,000/year	SWCD NRCS FSA	2017-2027	50 acres \$10,000.00
2.a.6	Continue to cooperate with Red Rock Rural Water Systems on the expansion of the rural water systems and advise the public about County programs that will help manage potential contamination sources. Outreach – Direct mailings, news releases, USDA Update, personal contacts. Audience – 25 landowners-residents/year	SWCD County Land Management RRRWS	2017-2027	125 contacts \$0.00

Goals and Objectives		Des Moines River Watershed		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management				
Areas (DWSMA) and surficial aquifer areas.				
Objective 2.b Prevent Nitrate and Pesticide Infiltration of Groundwater with Emphasis on Shallow Groundwater areas.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.b.1	Promote proper application of fertilizers and pesticides and partner with local crop consultants to provide an informational field day on a bi-annual basis. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 100 landowners; \$2,000/year	SWCD County Land Management Local Crop Consultants NRCS, HLWD	2017-2027	1,000 contacts \$20,000.00
2.b.2	Promote AgBMPs along ditches and streams in surficial aquifer areas. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 50 landowners/year; \$500/year	SWCD County Land Management MPCA, TSA, HLWD	2017-2027	500 contacts \$5,000.00
2.b.3	Conduct annual free testing of nitrate, fecal coliform, and lead levels in well water. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 500 county residents/year; \$800/year for testing	SWCD County Land Management MDH, MDA	2017-2027	5,000 contacts \$8,000.00
2.b.4	Promote, assist and seek funding to assist landowners and operators with nutrient management plans. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Plans – 10 plans/year; \$20,000/year	SWCD County Land Management MPCA NRCS	2017-2027	100 plans \$200,000.00

Goals and Objectives		Des Moines River Watershed		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management				
Areas (DWSMA) and surficial aquifer areas.				
Objective 2.c Prevent Groundwater Contamination from Unused Wells				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.c.1	Work with well contractors to promote proper well protection and sealing. Outreach – Direct mailings and personal contacts, websites Audience – Well Contractors; \$50/year	SWCD County Land Management RRRWS, Cities	2017-2027	Well Contractors \$500.00
2.c.2	Provide information to County residents concerning proper well protection and sealing programs. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – Residents; \$500/year	SWCD County Land Management RRRWS Cities	2017-2027	Residents \$5,000.00

2.c.3	Promote, assist and seek funding to prevent contamination of groundwater by providing cost-share for the sealing of unused wells. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 wells/year; \$5,250/year	SWCD County Land Management	2017-2027	100 wells \$52,500.00
-------	--	--------------------------------	-----------	--------------------------

Goals and Objectives		Des Moines River Watershed		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management Areas (DWSMA) and surficial aquifer areas.				
Objective 2.d Protect Long-Term Water Supply				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.d.1	Support water conservation by using existing educational materials. Outreach – Direct mailings, news releases, USDA Update, personal contacts, special programs, displays, websites Audience – 2,000 county residents/year; \$500/year	SWCD County Land Management RRRWS Cities, MDH	2017-2027	20,000 contacts \$5,000.00
2.d.2	Protect long-term water supply by enforcing zoning ordinances through Conditional Use Hearings for municipal, industrial, irrigation and public water supply wells. Outreach – Direct mailings, personal contacts, websites Audience – Planning Commission, Cities, Water Suppliers, landowners; \$50/year	County Land Management DNR MDH Cities	2017-2027	County Residents Planning Commission \$500.00
2.d.3	Assist public water suppliers with water exploration within the watershed. Outreach – Personal contacts Audience – Red Rock Rural Water Systems, other suppliers	County Land Management SWCD	2017-2027	Water Suppliers \$0.00
2.d.4	Assist the DNR in collecting and compiling data on three local wells. Outreach – Direct contact Reading – 3 wells/8 months – 24 readings/year	SWCD DNR	2017-2027	240 readings \$0.00

Goals and Objectives		Des Moines River Watershed		
Priority Concern 3. Drainage Management				
Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems				
Objective 3.a Address Impacts of Drainage Management.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
3.a.1	Promote conservation drainage practices in the watershed. Seek incentive funds and cost-share to assist producers with the installation of conservation drainage practices. These practices include alternative tile intakes, structures to control tile drainage, saturated buffers, storage & treatment wetlands, alternative side-inlets, bioreactors and new and innovative practices. High priority areas would include impaired water bodies and reaches of impaired water bodies. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment - 10 practices/year; \$100,000.00/year	SWCD NRCS HLWD TSA	2017-2027	100 BMPs \$1,000,000.00
3.a.2	Promote, assist and seek funding for the installation of grass waterways and water and sediment control basins. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 5 projects/year; \$20,000.00/year	SWCD NRCS HLWD TSA	2017-2027	50 projects \$200,000.00
3.a.3	Promote and seek funding for the installation of alternative tile intakes. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 50/year; \$50,000/year	SWCD County Land Management NRCS, HLWD, TSA	2017-2027	500 intakes \$500,000.00
3.a.4	Promote, assist and seek funding for the installation of Urban BMPs, to individuals and the community of Windom as found in the MN Stormwater Manual. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 4 BMPs/year; \$5,000/year	SWCD County Land Management Cottonwood County Highway TSA, City of Windom HLWD	2017-2027	40 BMPs \$50,000.00

Goals and Objectives		Des Moines River Watershed		
Priority Concern 3. Drainage Management				
Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems				
Objective 3.b Develop a Comprehensive Multi-Purpose Drainage Management Plan				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
3.b.1	Develop a Comprehensive Multi-Purpose Drainage Management Plan (DMP) that addresses present and future drainage needs as well as methods to mitigate the unintended consequences of agricultural drainage on water quality and quantity. Hire Drainage staff to work with the SWCD to investigate and direct resources to assist the County Drainage Authority. Technology – Data collection, drainage database Research – Compiling information and data Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – Cottonwood County Drainage Authority and Watershed residents Plan Development - \$100,000	SWCD County Land Management, County Auditor/Treasurer's Office and other County Departments, NRCS RRRWS, HLWD, USF&WS, MPCA, DNR, County Drainage Authority, other LGUs	2017-2027	Watershed Residents \$100,000.00
3.b.2	Investigate existing information of all public drainage systems and develop a GIS layer of all public drainage systems in Cottonwood County. Technology – GIS, drainage database Target Audience – Cottonwood County Drainage Authority and Watershed Residents	County Land Management County Auditor/Treasurer's Office SWCD	2017-2027	Watershed Residents \$50,000.00
3.b.3	Develop an inventory of digital dams to hydro-condition the DEM to better model the flow of surface water. Technology – Culvert Inventory, targeting programs One-time activity - \$50,000; annual maintenance - \$500/year	SWCD County Land Management TSA Private Contractor	2017-2027	\$55,000.00

Goals and Objectives		Des Moines River Watershed		
Priority Concern 3. Drainage Management				
Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems				
Objective 3.c Create more short-term and long-term water storage.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
3.c.1	Work to identify areas for water retention projects.	SWCD	2017-2027	35 contacts \$0.00
	Outreach - Direct mailings, news releases, USDA Update, personal contacts. Target Audience – 7 landowners/year	County Land Management Cottonwood County Highway HLWD, TSA		
3.c.2	Implement water storage practices including retention and detention basins, in-ditch storage, storage and treatment wetlands, ponds, earthen dams, and other new and innovative practices. 1 project/year, \$200,000/year	SWCD NRCS HLWD TSA, City of Windom	2017-2027	10 projects \$2,000,000.00

Goals and Objectives			Des Moines River Watershed	
Priority Concern 4. Feedlots and SSTs				
Goal 4: Protect public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety situations.				
Objective 4.a Assist Feedlot Owners to Maintain Compliance with MN Rule 7020 Standards.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
4.a.1	Conduct annual meetings with Township Officials to promote AgBMPs for livestock producers. Outreach – Direct mailings and personal contacts, websites Audience – 40 township officials/year	County Land Management SWCD	2017-2027	400 contacts \$0.00
4.a.2	Inspect 7% of all registered feedlots per year to verify compliance with MN Statute 7020. Outreach – Direct mailings and personal contacts, websites Audience – Feedlot Owners and Operators 6 inspections/year; \$1,000/year	SWCD County Land Management	2017-2027	60 inspections \$10,000.00
4.a.3	Continue Tempo reporting for registered feedlots in the watershed. Outreach - Personal contacts, websites Technology – Feedlot database Audience – Feedlot Owners and Operators 80 records/year Staff, \$5,000/year	SWCD County Land Management	2017-2027	800 records Staff \$50,000.00
4.a.4	Promote, assist and seek implementation funding through EQIP, State Cost-Share and Clean Water Fund for livestock waste management BMPs. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 5 BMPs/year; \$500,000/year	SWCD NRCS HLWD, TSA	2017-2027	50 BMPs \$5,000,000.00
4.a.5	Promote, assist and seek funding for livestock producers with feedlots containing 300-999 animal units to develop and maintain a manure management plan. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Plans – 10 plans/year; \$30,000/year	SWCD County Land Management	2017-2027	100 plans \$300,000.00
4.a.6	Promote, assist and seek funding to help livestock producers in the watershed that need waste management upgrades as found with the Level III Inventory. Outreach - Direct mailings, news releases, USDA Update, personal contacts Audience – Livestock producers 2 BMPs/year; \$60,000/year	SWCD County Land Management HLWD MPCA NRCS	2017-2027	20 BMPs \$600,000.00

Goals and Objectives				Des Moines River Watershed
Priority Concern 4. Feedlots and SSTS				
Goal 4: Protect public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety situations.				
Objective 4.b Continue to bring Nonconforming SSTS into Compliance with State Standards.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
4.b.1	Promote, assist and seek funding to upgrade non-compliant systems through qualifying loan programs. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 20 systems/ year; \$300,000/year	SWCD County Land Management MPCA, MDA HLWD	2017-2027	200 systems \$3,000,000.00
4.b.2	Provide an informational packet regarding SSTS maintenance to every homeowner that installs a new or upgraded system Outreach - personal contacts, websites Audience – 20 homeowners/year; \$200/year	SWCD County Land Management MPCA	2017-2027	200 contacts \$2,000.00
4.b.3	Develop a GIS layer for all septic systems in the County. Technology – Computer, software, SSTS database, website Staff; \$5,000/year	SWCD County Land Management	2017-2027	Staff \$50,000.00
4.b.4	Provide information on state SSTS rules and educate property owners about the public health threats and environmental harm posed by non-complying systems. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 3,700 homeowners/year; \$500.00/year	SWCD County Land Management RRRWS	2017-2027	37,000 contacts \$5,000.00
4.b.5	Keep public informed on the Cottonwood County SSTS Ordinance. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 3,000 county residents/year; \$500.00/year	SWCD County Land Management MPCA	2017-2027	15,000 contacts \$1,500.00
4.b.6	Promote, assist and seek funding to bring unsewered homes into compliance. Outreach - Direct mailings and personal contacts, websites Audience – 1 Homeowner, \$20,000/year	SWCD, City of Windom County Land Management HLWD, MPCA, MDH	2017-2027	10 Homeowners \$200,000.00
4.b.7	Consider a systematic approach to inspect and upgrade all SSTS in the watershed. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites. 300 inspections/upgrades; Per upgrade: \$15,000 total cost, \$5,000 cost-share Enforcement	SWCD County Land Management MPCA County Attorney	2017-2027	\$1,500,000.00

C. Implementation to Address Priority Concerns (Watonwan and Blue Earth River Watersheds)

This section establishes the implementation program for local water management to address priority concerns by watersheds. Action items describe specific measures that the County intends to implement, in cooperation with appropriate local, state and federal agencies and organizations. Action items listed below were reached by consensus and are not necessarily in rank order.

Goals and Objectives		Watowan and Blue Earth River Watersheds		
Priority Concern 1. Improve Surface Water Quality				
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County				
Objective 1.a Protect Soil from Erosion and Prevent Agricultural Runoff.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
1.a.1	Assist with coordination and funding of environmental education events for the students of the watershed. These include (but not limited to) Children's Water Festival and Environmental Fair. Target Audience – 500 students/year; \$500/year	County Land Management, SWCD, NRCS, GBERBA, USF&WS, RRRWS, DNR	2017-2027	5,000 students \$5,000.00
1.a.2	Assist with coordination and funding of educational events centered on soil health and sustainable agricultural practices. Target Audience – 500 landowners-operators/year; \$5,000/year	SWCD County Land Management NRCS, GBERBA	2017-2027	5,000 landowners \$50,000.00
1.a.3	Educate landowners on lakeshore and streambank stabilization practices. Technology – website Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 500 landowners/year; \$2,000/year	County Land Management SWCD MN DNR	2017-2027	5,000 contacts \$20,000.00
1.a.4	Promote and seek funding for soil health and sustainable practices such as cover crops, nutrient management, minimal tillage, grazing management, and other new and innovative practices. Target Audience – 100 landowners/year; 80 acres/landowner - \$400,000/year	SWCD County Land Management NRCS, MDA	2017-2027	1,000 landowners \$4,000,000.00
1.a.5	Promote conservation practices and programs to landowners in the watershed. These include State Cost-Share, RIM, ACEP, CRP, CREP, EQIP, CSP and others. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 2,000 landowners/year – 100 sign-ups/year; \$6,000/year	SWCD, County Land Management, NRCS, GBERBA, FSA	2017-2027	20,000 contacts 1,000 sign-ups \$60,000.00
1.a.6	Promote, assist and seek funding to reduce the amount of wind erosion by planting field windbreak, living snow fences and farmstead windbreaks. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 0.5 miles windbreaks and 2 acres shelterbelts/year; \$5,000/year	SWCD NRCS	2017-2027	5 miles 20 acres \$50,000.00
1.a.7	Promote, assist and seek funding to reduce erosion by installing eligible streambank and lakeshore stabilization projects. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 practices/year; \$50,000/year	SWCD County Land Management NRCS GBERBA, TSA	2017-2027	100 practices \$500,000.00
1.a.8	Promote, assist and seek funding for the installation of grass waterways and water and sediment control basins. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 5 projects/year; \$20,000.00/year	SWCD NRCS GBERBA TSA	2017-2027	50 projects \$200,000.00

1.a.9	Promote enrollment in the Minnesota Agricultural Water Quality Certification Program through the Minnesota Department of Agriculture. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 producers/year; \$2,000/year	SWCD NRCS MDA TSA, GBERBA	2017-2027	100 producers \$20,000.00
1.a.10	Follow up with Soil Erosion Law complaints and assist landowners to mitigate any documented excessive soil erosion issues. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Staff - \$5,000; 5 Complaints/year, \$30,000 for practices per complaint	SWCD, TSA County Land Management NRCS, BWSR, MDA, GBERBA County Attorney	2017-2027	50 Complaints Staff/practices \$1,550,000.00
1.a.11	Utilize GIS and modeling software to prioritize, target, and measure the placement of BMPs on the landscape to improve water quality. Technology – Database development Staff - \$1,000.00/year	SWCD County Land Management TSA, GBERBA Private Consultant	2017-2027	Staff \$10,000.00
1.a.12	Educate Certified Crop Advisers and Agricultural Groups about the goals and objectives of the County Water Plan Technology – website Outreach – email updates, news releases, USDA Update, personal contacts, websites Target Audience 10 Certified Crop Advisers/year;	SWCD, County Land Management	2017-2027	100 Certified Crop Advisers

Goals and Objectives		Watonwan and Blue Earth River Watersheds		
Priority Concern 1. Improve Surface Water Quality				
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County				
Objective 1.b Wetland Restoration and Management.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
1.b.1	Provide technical assistance to the Wetland Conservation Act Technical Evaluation Panel (TEP) to minimize the amount of wetland acres lost county wide. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 1,500 landowner and operators/year	SWCD NRCS County Land Management DNR	2017-2027	15,000 contacts \$0.00
1.b.2	Work with DNR and USF&WS to expand or enhance wetland in existing wildlife areas. Educate landowners on the benefits of converting drained wetlands back to a permanent native vegetated state, using RIM, ACEP, CREP, and CRP or other long term conservation program. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 1,500 landowners and operators/year	SWCD NRCS DNR USF&WS FSA TSA	2017-2027	15,000 contacts \$0.00
1.b.3	Promote, assist and seek funding to enroll marginal land into available wetland restoration programs including RIM, ACEP, CREP, and CRP or other long term conservation program. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 1,500 landowners and operators/year Enrollment – 50 contracts /year: \$100,000/year	SWCD County Land Management NRCS FSA	2017-2027	500 contracts \$1,000,000.00

Goals and Objectives		Watonwan and Blue Earth River Watersheds		
Priority Concern 1. Improve Surface Water Quality				
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County				
Objective 1.c Address TMDL Impaired Waters.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
1.c.1	Provide public information on water quality. Outreach – Booths and Displays at County Fair, Farm & Home Shows, others, websites Audience – 2,000 landowners, operators and residents /year; \$600/year	SWCD County Land Management	2017-2027	20,000 contacts \$6,000.00
1.c.2	Provide technical, administrative assistance to MPCA on scheduled watershed studies. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 2,000 residents/year	SWCD County Land Management GBERBA, MPCA	2017-2027	20,000 contacts \$0.00
1.c.3	Work with the TMDL/WRAPS Implementation Plan for the watershed and hiring technical staff to promote conservation efforts in the watershed. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 2,000 landowners-operators and one FTE technical staff/year; \$50,000/year	SWCD County Land Management GBERBA MPCA	2017-2027	20,000 contacts 1 staff-10 years \$500,000.00
1.c.4	Promote, assist and seek funding to implement BMPs towards improving the water quality of Bingham Lake, Fish Lake, and Mountain Lake. Outreach – Direct mailings, news releases, USDA Update, personal contacts. Audience – 50 landowners-residents/year: BMPs – 2/year: \$20,000/year	SWCD County Land Management GBERBA, MPCA	2017-2027	500 contacts 20 BMPs \$200,000.00

Goals and Objectives		Watonwan and Blue Earth River Watersheds		
Priority Concern 1. Improve Surface Water Quality				
Goal 1: Prevent further degradation of stream and lake water quality in Cottonwood County				
Objective 1.d Buffers on Public and Other Waters				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
1.d.1	Promote, assist and seek funding to enroll riparian land into a perpetual buffer program. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 50 acres/year; \$10,000/year	SWCD, NRCS County Land Management, GBERBA	2017-2027	500 acres \$100,000.00
1.d.2	Promote the use of buffer strips along ditches, streams and lakes within the watershed utilizing available conservation programs and incentives. Technology – LiDAR, Stream Power Index, others Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 300 landowners/year; \$2,000/year	SWCD NRCS County Land Management FSA TSA	2017-2027	3,000 contacts \$20,000.00
1.d.3	Promote, assist and seek funding for eligible acres enrolling into a buffer strip program along ditches, streams and lakes. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 25 acres/year; \$5,000/year	SWCD NRCS County Land Management GBERBA, FSA	2017-2027	250 acres \$50,000.00

1.d.4	Promote and encourage landowners to install a minimum of 30 ft. of perennial vegetated buffers on water courses and basins as identified on the Other Waters Inventory Map. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – 40 parcels/year; \$2,000/year	SWCD County Land Management FSA, NRCS	2017-2027	400 parcels \$20,000.00
1.d.5	Promote, assist and seek funding for eligible acres enrolling into a buffer strip program along water courses and basins identified on the Other Waters Inventory Map. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 acres/year; \$2,000/year	SWCD County Land Management FSA, NRCS	2017-2027	100 acres \$20,000.00

Goals and Objectives		Watowan and Blue Earth River Watersheds		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management				
Areas (DWSMA) and surficial aquifer areas.				
Objective 2.a Support Wellhead Protection Planning and Implementation.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.a.1	Assist the Cities of Mountain Lake and Windom with completing and implementing their Wellhead Protection Plans and amendments. Outreach – Direct mailings and personal contacts, websites Audience – Contact City Department heads/year	SWCD, MDH, RRRWS County Land Management Cities of Mountain Lake and Windom	2017-2027	City Officials \$0.00
2.a.2	Educate landowners and residents on DWSMAs and measures to protect the groundwater. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 100 landowners-residents/year	SWCD County Land Management Cities RRRWS	2017-2027	1,000 contacts \$0.00
2.a.3	Protect DWSMA and surficial aquifer areas from agricultural and industrial contamination through zoning ordinances. Manure management plans to be completed and followed in DWSMA and surficial aquifers. Outreach – Direct mailings and personal contacts, websites Audience – 10 landowners, \$1,000/year	SWCD County Land Management MDH	2017-2027	100 contacts \$10,000.00
2.a.4	Make available to the public the MDH wellhead protection areas through the county GIS. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience –20 landowners-residents/year	SWCD County Land Management MDH	2017-2027	100 contacts \$0.00
2.a.5	Promote, assist and seek funding to enroll eligible acres (highly vulnerable wellhead areas) into the RIM Wellhead Protection Program and CREP. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enroll – 5 acres/year; \$1,000/year	SWCD NRCS FSA	2017-2027	50 acres \$10,000.00

Goals and Objectives		Watowan and Blue Earth River Watersheds		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management Areas (DWSMA) and surficial aquifer areas.				
Objective 2.b Prevent Nitrate and Pesticide Infiltration of Groundwater with Emphasis on Shallow Groundwater areas.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.b.1	Promote proper application of fertilizers and pesticides and partner with local crop consultants to provide an informational field day on a bi-annual basis. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 100 landowners; \$2,000/year	SWCD County Land Management Local Crop Consultants NRCS	2017-2027	1,000 contacts \$20,000.00
2.b.2	Promote AgBMPs along ditches and streams in surficial aquifer areas. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 50 landowners/year; \$500/year	SWCD County Land Management MPCA, TSA	2017-2027	500 contacts \$5,000.00
2.b.3	Conduct annual free testing of nitrate, fecal coliform, and lead levels in well water. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 500 county residents/year; \$800/year for testing	SWCD County Land Management MDH, MDA	2017-2027	5,000 contacts \$8,000.00
2.b.4	Promote, assist and seek funding to assist landowners and operators with nutrient management plans. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Plans – 10 plans/year; \$20,000/year	SWCD County Land Management MPCA NRCS	2017-2027	100 plans \$200,000.00

Goals and Objectives		Watowan and Blue Earth River Watersheds		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management Areas (DWSMA) and surficial aquifer areas.				
Objective 2.c Prevent Groundwater Contamination from Unused Wells				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.c.1	Work with well contractors to promote proper well protection and sealing. Outreach – Direct mailings and personal contacts, websites Audience – Well Contractors; \$50/year	SWCD County Land Management RRRWS, Cities	2017-2027	Well Contractors \$500.00
2.c.2	Provide information to County residents concerning proper well protection and sealing programs. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Audience – Residents; \$500/year	SWCD County Land Management RRRWS Cities	2017-2027	Residents \$5,000.00

2.c.3	Promote, assist and seek funding to prevent contamination of groundwater by providing cost-share for the sealing of unused wells. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 10 wells/year; \$5,250/year	SWCD County Land Management	2017-2027	100 wells \$52,500.00
-------	--	--------------------------------	-----------	--------------------------

Goals and Objectives		Watonwan and Blue Earth River Watersheds		
Priority Concern 2. Protect Groundwater				
Goal 2: Assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management Areas (DWSMA) and surficial aquifer areas.				
Objective 2.d Protect Long-Term Water Supply				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
2.d.1	Support water conservation by using existing educational materials. Outreach – Direct mailings, news releases, USDA Update, personal contacts, special programs, displays, websites Audience – 2,000 county residents/year; \$500/year	SWCD County Land Management RRRWS Cities, MDH	2017-2027	20,000 contacts \$5,000.00
2.d.2	Protect long-term water supply by enforcing zoning ordinances through Conditional Use Hearings for municipal, industrial, irrigation and public water supply wells. Outreach – Direct mailings, personal contacts, websites Audience – Planning Commission, Cities, Water Suppliers, landowners; \$50/year	County Land Management DNR MDH Cities	2017-2027	County Residents Planning Commission \$500.00

Goals and Objectives		Watowan and Blue Earth River Watersheds		
Priority Concern 3. Drainage Management				
Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems				
Objective 3.a Address Impacts of Drainage Management.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
3.a.1	Promote conservation drainage practices in the watershed. Seek incentive funds and cost-share to assist producers with the installation of conservation drainage practices. These practices include alternative tile intakes, structures to control tile drainage, saturated buffers, storage & treatment wetlands, alternative side-inlets, bioreactors and new and innovative practices. High priority areas would include impaired water bodies and reaches of impaired water bodies. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment - 10 practices/year; \$100,000.00/year	SWCD NRCS GBERBA TSA	2017-2027	100 BMPs \$1,000,000.00
3.a.2	Promote, assist and seek funding for the installation of grass waterways and water and sediment control basins. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 5 projects/year; \$20,000.00/year	SWCD NRCS GBERBA TSA	2017-2027	50 projects \$200,000.00
3.a.3	Promote and seek funding for the installation of alternative tile intakes. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 50/year; \$50,000/year	SWCD County Land Management NRCS, GBERBA, TSA	2017-2027	500 intakes \$500,000.00
3.a.4	Promote, assist and seek funding for the installation of Urban BMPs, to individuals and the communities of Bingham Lake and Mountain Lake as found in the MN Stormwater Manual. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 2 BMPs/year: \$2,500/year	SWCD County Land Management Cottonwood County Highway TSA, GBERBA Cities	2017-2027	20 BMPs \$25,000.00

Goals and Objectives		Watonwan and Blue Earth River Watersheds		
Priority Concern 3. Drainage Management				
Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems				
Objective 3.b Develop a Comprehensive Multi-Purpose Drainage Management Plan				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost

3.b.1	Develop a Comprehensive Multi-Purpose Drainage Management Plan (DMP) that addresses present and future drainage needs as well as methods to mitigate the unintended consequences of agricultural drainage on water quality and quantity. Hire Drainage staff to work with the SWCD to investigate and direct resources to assist the County Drainage Authority. Technology – Data collection, drainage database Research – Compiling information and data Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Target Audience – Cottonwood County Drainage Authority and Watershed residents Plan Development - \$100,000	SWCD County Land Management, County Auditor/Treasurer's Office and other County Departments, NRCS RRRWS, GBERBA, USF&WS, MPCA, DNR, County Drainage Authority, other LGUs	2017-2027	Watershed Residents \$100,000.00
3.b.2	Investigate existing information of all public drainage systems and develop a GIS layer of all public drainage systems in Cottonwood County. Technology – GIS, drainage database Target Audience – Cottonwood County Drainage Authority and Watershed Residents	County Land Management County Auditor/Treasurer's Office SWCD	2017-2027	Watershed Residents \$50,000.00
3.b.3	Develop an inventory of digital dams to hydro-condition the DEM to better model the flow of surface water. Technology – Culvert Inventory, targeting programs Annual maintenance - \$500/year	SWCD County Land Management TSA, GBERBA Private Contractor	2017-2027	\$5,000.00

Goals and Objectives		Watonwan and Blue Earth River Watersheds		
Priority Concern 3. Drainage Management				
Goal 3: Improve stream and lake water quality and hydrology by better managing public and private agriculture drainage systems				
Objective 3.c Create more short-term and long-term water storage.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
3.c.1	Work to identify areas for water retention projects. Outreach - Direct mailings, news releases, USDA Update, personal contacts. Target Audience – 7 landowners/year	SWCD County Land Management Cottonwood County Highway GBERBA, TSA	2017-2027	35 contacts \$0.00
3.c.2	Implement water storage practices including retention and detention basins, in-ditch storage, storage and treatment wetlands, ponds, earthen dams, and other new and innovative practices. 1 project/year. \$200,000/year	SWCD NRCS GBERBA TSA	2017-2027	10 projects \$2,000,000.00

Goals and Objectives		Watonwan and Blue Earth River Watersheds		
Priority Concern 4. Feedlots and SSTs				
Goal 4: Protect public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety situations.				
Objective 4.a Assist Feedlot Owners to Maintain Compliance with MN Rule 7020 Standards.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
4.a.1	Conduct annual meetings with Township Officials to promote AgBMPs for livestock producers. Outreach – Direct mailings and personal contacts, websites Audience – 40 township officials/year	County Land Management SWCD	2017-2027	400 contacts \$0.00
4.a.2	Inspect 7% of all registered feedlots per year to verify compliance with MN Statute 7020. Outreach – Direct mailings and personal contacts, websites Audience – Feedlot Owners and Operators 6 inspections/year; \$1,000/year	SWCD County Land Management	2017-2027	60 inspections \$10,000.00
4.a.3	Continue Tempo reporting for registered feedlots in the watershed. Outreach - Personal contacts, websites Technology – Feedlot database Audience – Feedlot Owners and Operators 80 records/year Staff, \$5,000/year	SWCD County Land Management	2017-2027	800 records Staff \$50,000.00
4.a.4	Promote, assist and seek implementation funding through EQIP, State Cost-Share and Clean Water Fund for livestock waste management BMPs. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 5 BMPs/year; \$500,000/year	SWCD NRCS GBERBA, TSA	2017-2027	50 BMPs \$5,000,000.00
4.a.5	Promote, assist and seek funding for livestock producers with feedlots containing 300-999 animal units to develop and maintain a manure management plan. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Plans – 10 plans/year; \$30,000/year	SWCD County Land Management	2017-2027	100 plans \$300,000.00

Goals and Objectives		Watowan and Blue Earth River Watersheds		
Priority Concern 4. Feedlots and SSTS				
Goal 4: Protect public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety situations.				
Objective 4.b Continue to bring Nonconforming SSTS into Compliance with State Standards.				
Watershed	Action	Responsibility	Time Frame	Total Units/Cost
4.b.1	Promote, assist and seek funding to upgrade non-compliant systems through qualifying loan programs. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Enrollment – 20 systems/ year; \$300,000/year	SWCD County Land Management MPCA, MDA GBERBA	2017-2027	200 systems \$3,000,000.00
4.b.2	Provide an informational packet regarding SSTS maintenance to every homeowner that installs a new or upgraded system Outreach - personal contacts, websites Audience – 20 homeowners/year; \$200/year	SWCD County Land Management MPCA	2017-2027	200 contacts \$2,000.00
4.b.3	Develop a GIS layer for all septic systems in the County. Technology – Computer, software, SSTS database, website Staff; \$5,000/year	SWCD County Land Management	2017-2027	Staff \$50,000.00
4.b.4	Provide information on state SSTS rules and educate property owners about the public health threats and environmental harm posed by non-complying systems. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 3,700 homeowners/year; \$500.00/year	SWCD County Land Management RRRWS	2017-2027	37,000 contacts \$5,000.00
4.b.5	Keep public informed on the Cottonwood County SSTS Ordinance. Outreach - Direct mailings, news releases, USDA Update, personal contacts, websites Audience – 3,000 county residents/year; \$500.00/year	SWCD County Land Management MPCA	2017-2027	15,000 contacts \$1,500.00
4.b.6	Promote, assist and seek funding to bring unsewered homes into compliance. Outreach - Direct mailings and personal contacts, websites Audience – 1 Homeowner, \$20,000/year	SWCD County Land Management GBERBA, MPCA, MDH	2017-2027	10 Homeowners \$200,000.00
4.b.7	Consider a systematic approach to inspect and upgrade all SSTS in the watershed. Outreach – Direct mailings, news releases, USDA Update, personal contacts, websites. 300 inspections/upgrades; Per upgrade: \$15,000 total cost, \$5,000 cost-share Enforcement	SWCD County Land Management MPCA County Attorney	2017-2027	\$1,500,000.00

D. Implementation Schedule of Ongoing Activities

This section identifies other local activities and programs in Cottonwood County that contribute toward the goals and objectives of local water management. There are also many other public and private efforts at the regional, state and federal levels which serve to promote the regulatory and informational goals of sound water management. These particular ongoing activities typically encompass all watersheds in the county, reaching a broad cross-section of local residents and businesses.

D.1 Priority Concern 1. Improve Surface Water Quality.

- Administer and provide assistance for the State Revolving Fund for Ag BMPs.
- Assist with testing and providing services for commercial pesticide and fertilizer applicators.
- Continue to administer Wetland Conservation Act.
- Promote technical assistance for conservation programs.
- Promote conservation retirement programs. (RIM, ACEP, CREP, CRP)
- Participate in GBERBA Policy Board and Technical Committee meetings and other sponsored events.
- Continue to support the Area Certification Specialists for the MAWQCP Program.
- Participate in Watershed Restoration and Protection Strategy (WRAPS) process for all major watersheds.
- Provide technical assistance and enforcement, as necessary, for the Buffer and Soil Loss Laws.
- Provide technical assistance, funding, and outreach for the prevention and control of aquatic invasive species.

D.2 Priority Concern 2. Protect Groundwater.

- Continue provide Household Hazardous Waste Program.
- Provide a collection program for waste pesticides and empty containers.
- Promote recycling and solid waste management.
- Provide electronics and appliance disposal.
- Provide cost-share assistance for well sealing.
- Promote conservation retirement programs. (RIM, ACEP, CREP, CRP)
- Support the development of Groundwater Restoration and Protection Strategies (GRAPS)

D.3 Priority Concern 3. Drainage Management

- Assist the Drainage Authority to promote and encourage conservation practices that mitigate downstream peak flows on Public Drainage Systems petitioning for improvement.
- Update/digitize maps of drainage systems and drainage databases for public access.

D.4 Priority Concern 4. Feedlots & SSTS

- Continue to be a delegated County in the MPCA Feedlot Program and provide data to state databases.
- Inspect and assist producers in maintaining compliance with State rules.
- Promote and provide assistance for manure management plans and practices.
- Inspect and assist producers in maintaining compliance with County and State feedlot rules.
- Administer regulations, permit, and inspect SSTS.
- Create and update feedlot and SSTS GIS databases.

D.5 Additional Programs.

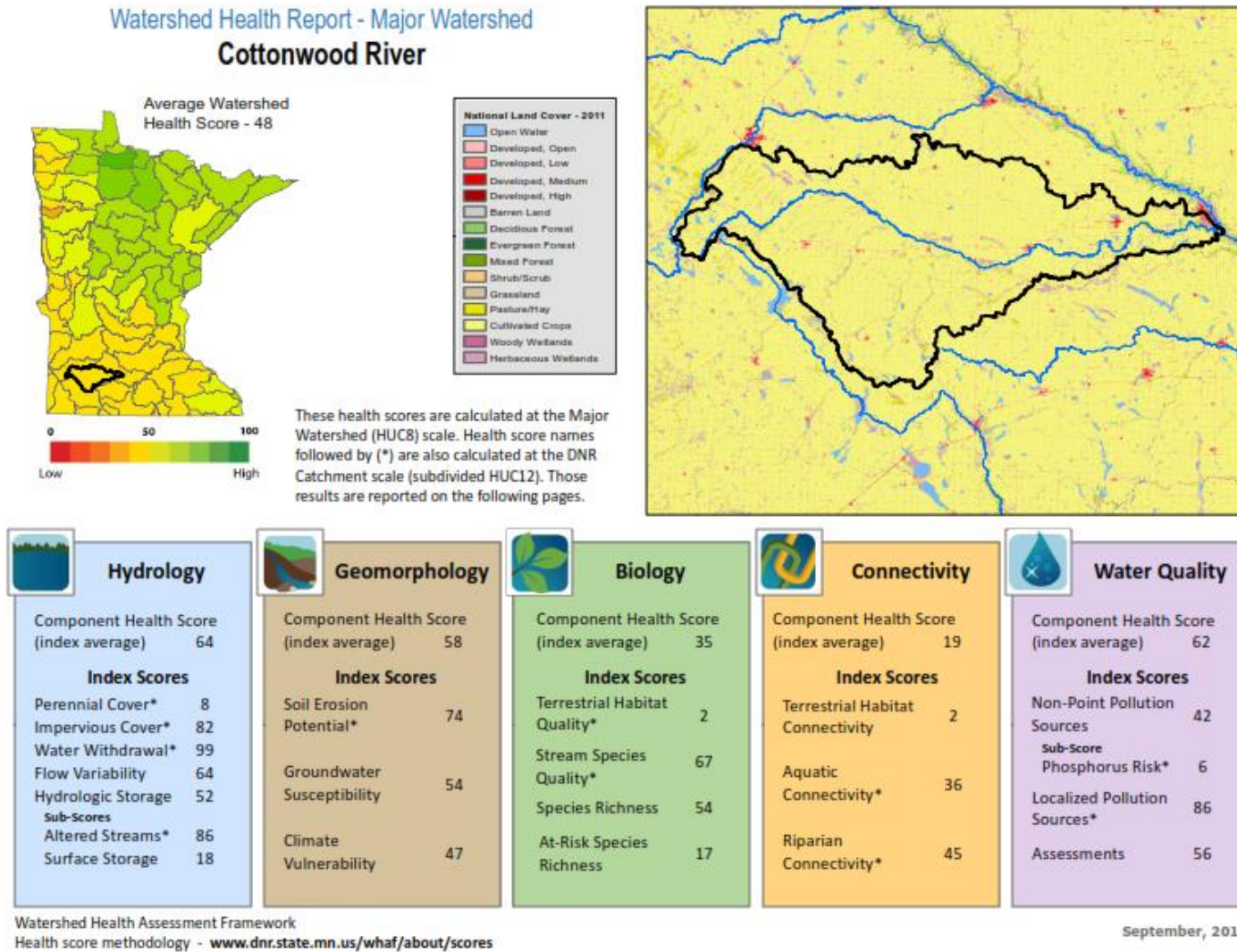
- Assist landowners with setback permits and zoning regulations.
- Facilitate and track biological control of noxious weeds.
- Educate Townships on the noxious weed program.
- Participate in the State's Rainfall monitoring program.
- Administer Shoreland and Floodplain Management Program.
- Update County Zoning Ordinances as necessary with the County Planning Commission.

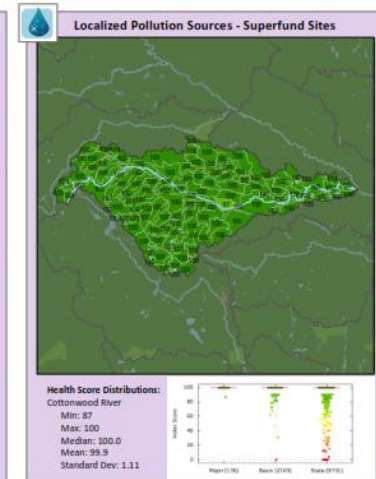
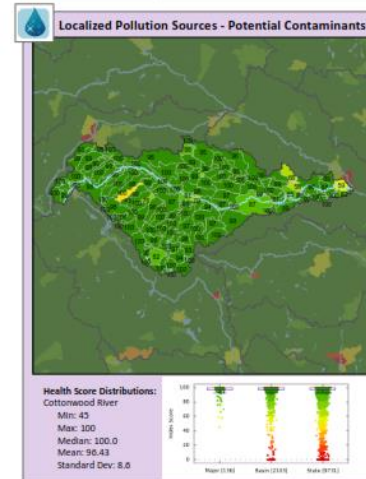
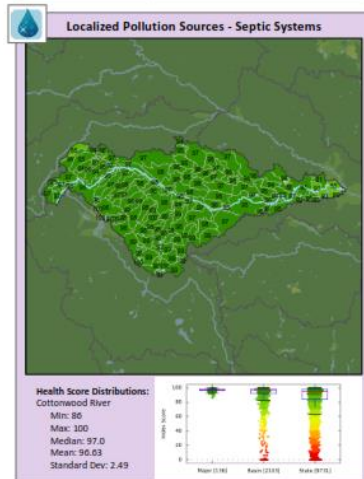
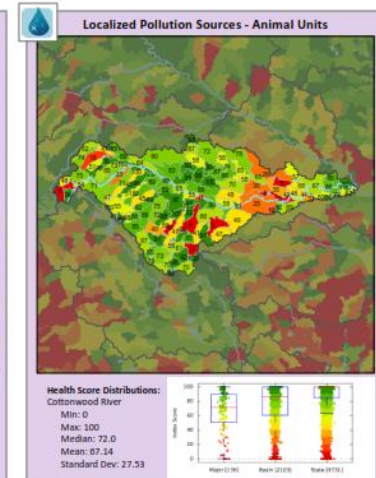
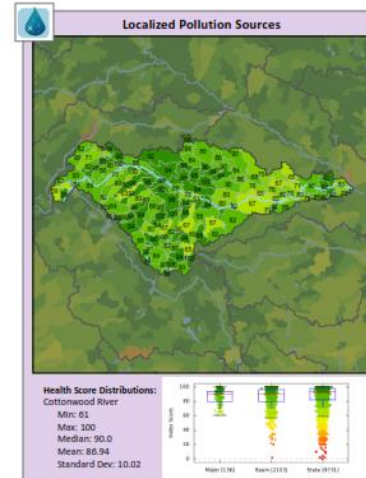
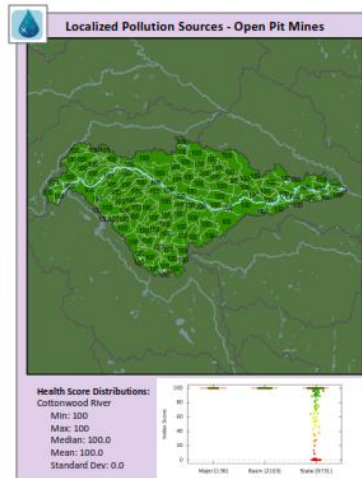
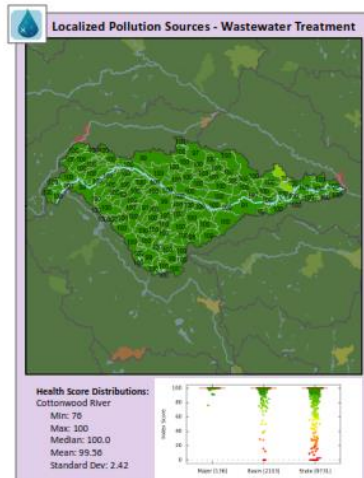
F. Appendix

F.1 Acronyms Used

ACEP – Agricultural Conservation Easement Program
AgBMPs - Agricultural Best Management Practices
Area II - Area II Minnesota River Basin Projects, Inc.
BWSR - Board of Water and Soil Resources
BNC - Brown Nicollet Cottonwood Joint Powers Water Quality Board
CCCLWP – Cottonwood County Comprehensive Local Water Plan
CDP - Census Designated Place
CRP – Conservation Reserve Program
CREP – Conservation Reserve Enhancement Program
CWF – Clean Water Fund
CWP - Clean Water Partnership
DMP – Drainage Management Plan
DNR - Department of Natural Resources
DWSMA - Drinking Water Supply Management Area
GIS - Geographic Information Systems
GBERBA - Greater Blue Earth River Basin Alliance
GRAPS – Groundwater Restoration and Protection Strategies
HLWD - Heron Lake Watershed District
LCCMR – Legislative-Citizen Commission on Minnesota Resources
L&CRWS - Lewis & Clark Rural Water System
MDA - Minnesota Department of Agriculture
MDH - Minnesota Department of Health
MPCA - Minnesota Pollution Control Agency
NRCS - Natural Resources Conservation Service
NWI - National Wetlands Inventory
PF - Pheasants Forever
RCRCA - Redwood-Cottonwood Rivers Control Area
RIM – Reinvest in Minnesota Program
RRRWS - Red Rock Rural Water Systems
SSTS - Subsurface Sewage Treatment System
SWCD - Soil and Water Conservation District
TMDL - Total Maximum Daily Load
USACOE - United States Army Corps of Engineers
USDA - United States Department of Agriculture
USF&WS - United States Fish and Wildlife Service
WRAPS – Watershed Restoration and Protection Strategies

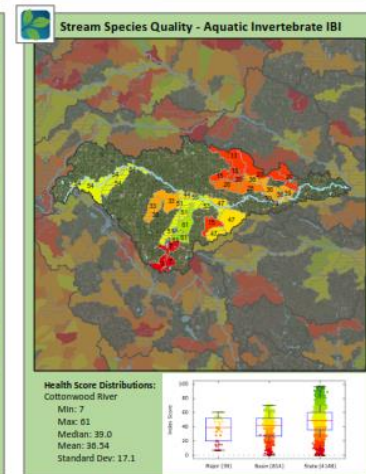
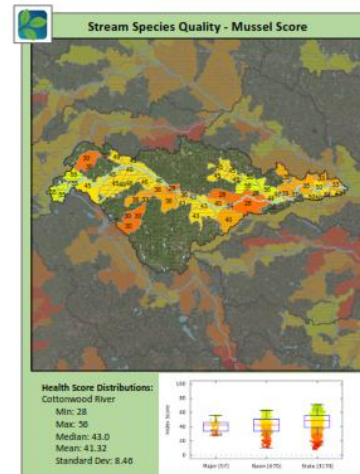
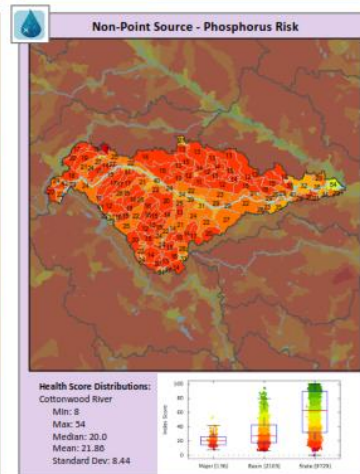
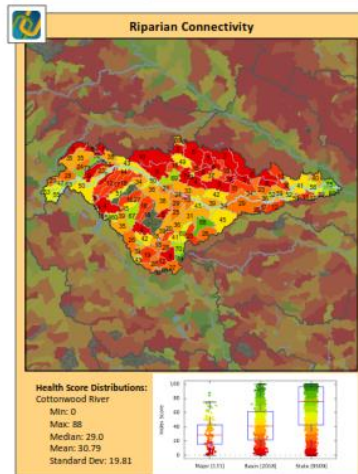
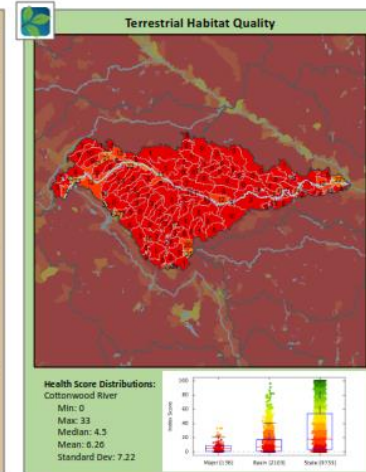
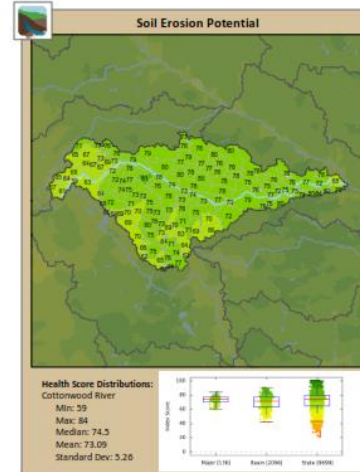
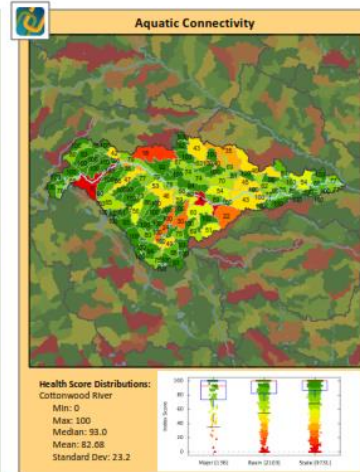
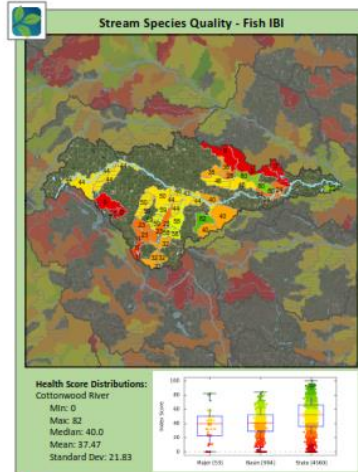
F.2 Watershed Report Card - Cottonwood River





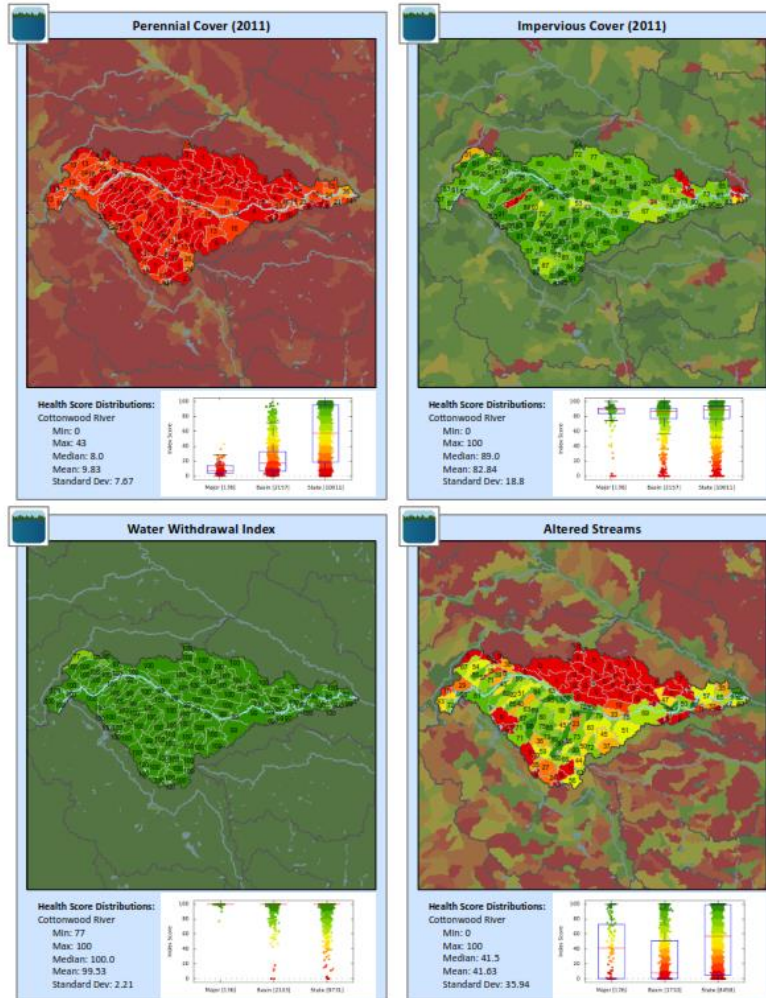
September, 2015

September, 2015



September, 2015

September, 2015



September, 2015



Watershed Health Assessment Framework

"Managing for System Health"



Watershed Report Card: Cottonwood River



People and Places:

Watershed Population:
2000 census - 29,562
2010 census - 29,187

Largest Cities - Population:

Sleepy Eye - 3,599
Tracy - 2,163
Springfield - 2,152
Walnut Grove - 871
Lamberton - 824

Counties - % of watershed:

Redwood - 36 %
Brown - 21 %
Cottonwood - 19 %
Lyon - 17 %
Murray - 8 %

Watershed Area:

Watershed size:
840,784 acres
1,314 square miles

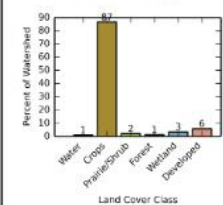
Watershed Surface Area:
Percent Land - 99 %
Percent Water - 1 %

HUC8 ID:
07020008

Basin Name:
Minnesota (0702)

Land Use:

**Percent of watershed area
by land cover type:**



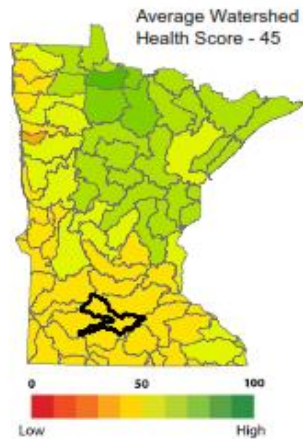
September, 2015

Report Card Found at MN DNR's website:

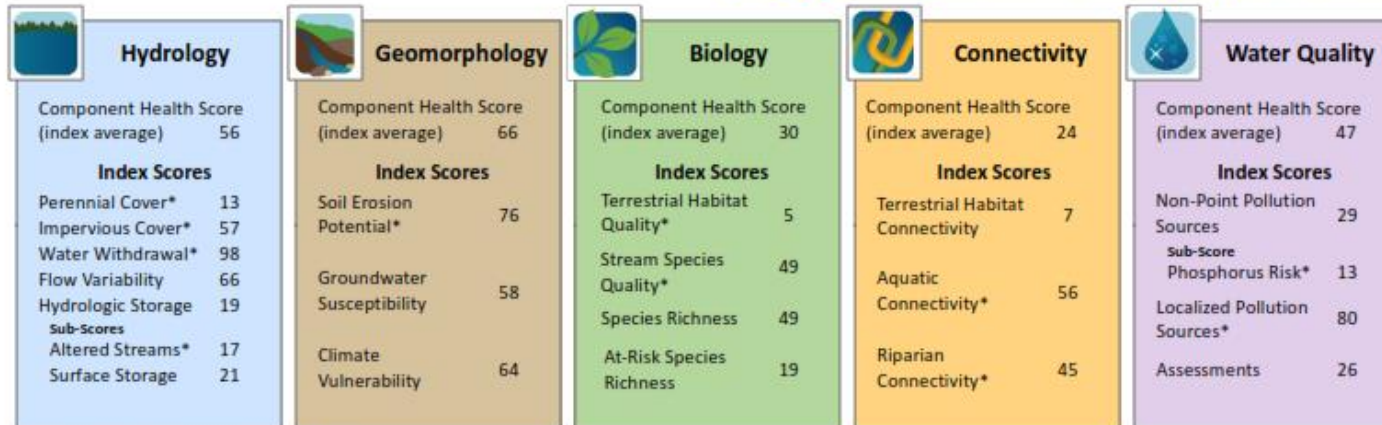
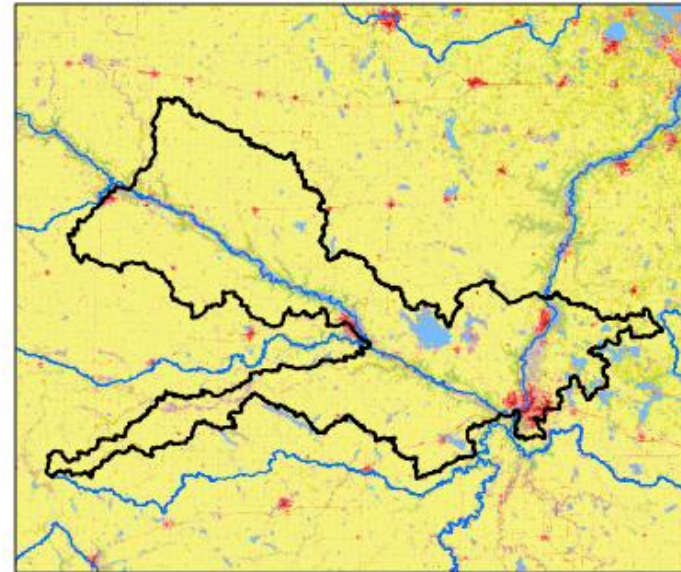
http://files.dnr.state.mn.us/natural_resources/water/watersheds/tool/watersheds/reportcard_indexmap.pdf

F.3 Watershed Report Card - Middle Minnesota

Watershed Health Report - Major Watershed Minn R-Mankato

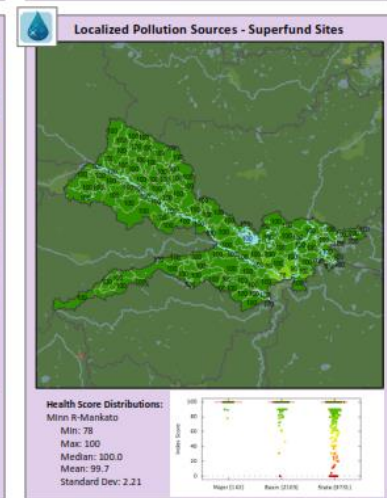
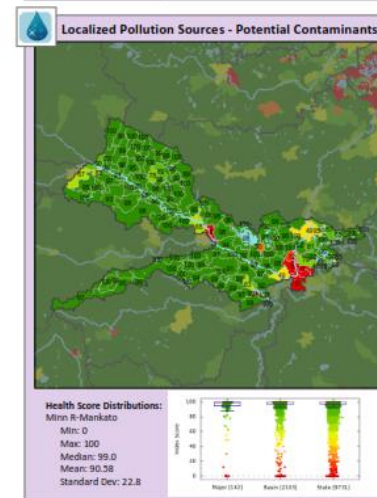
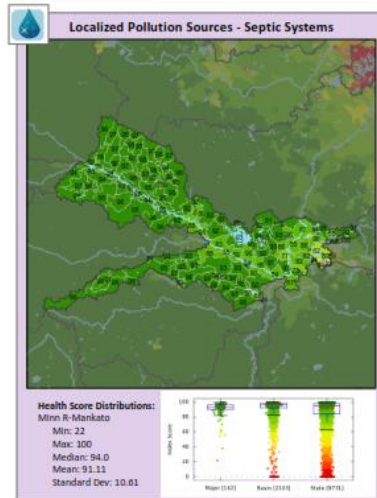
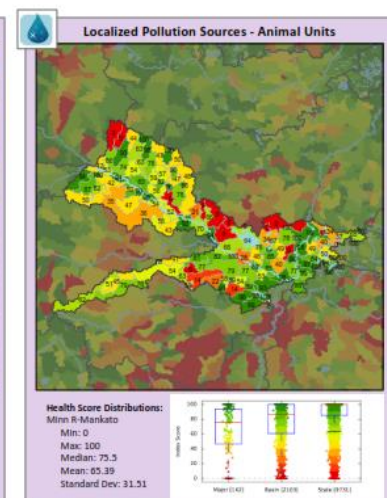
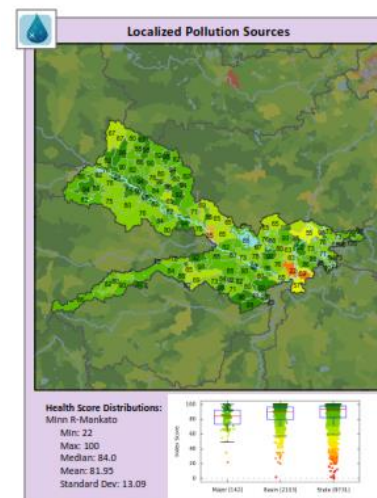
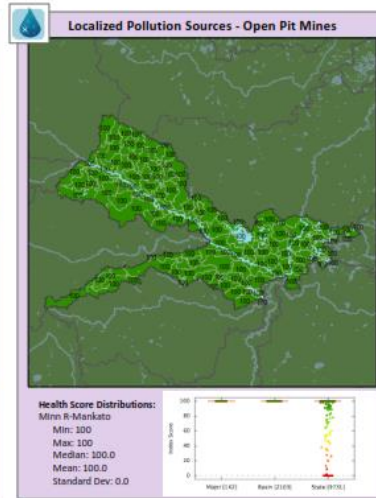
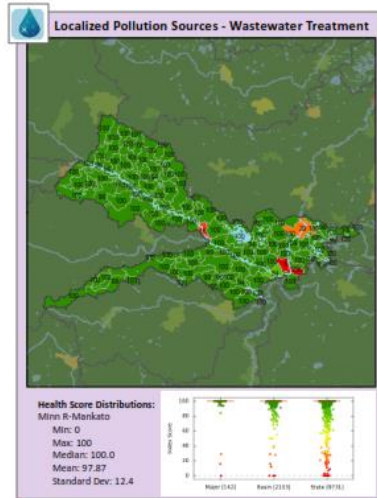


These health scores are calculated at the Major Watershed (HUC8) scale. Health score names followed by (*) are also calculated at the DNR Catchment scale (subdivided HUC12). Those results are reported on the following pages.



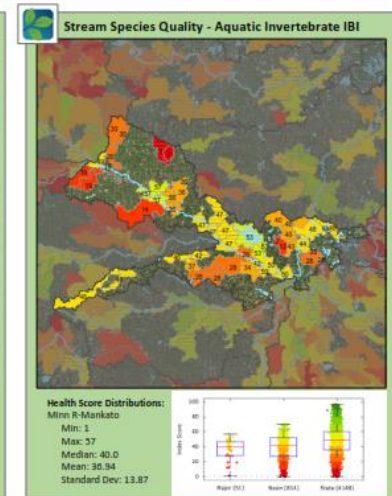
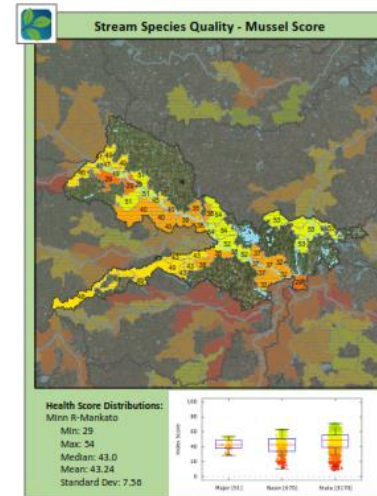
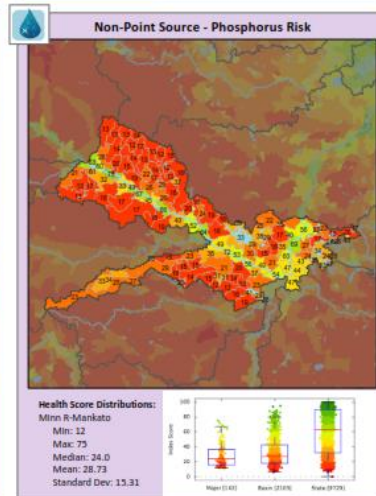
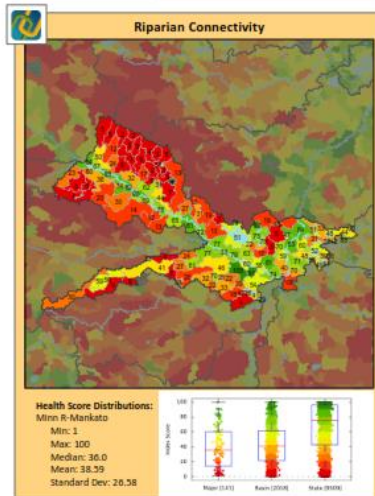
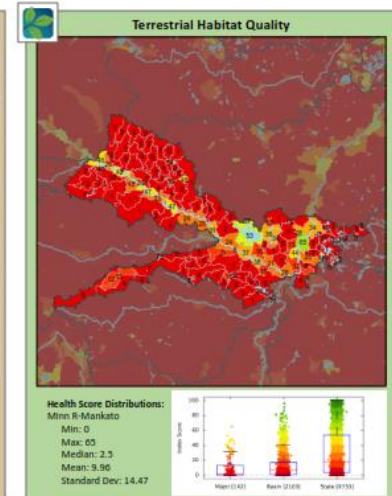
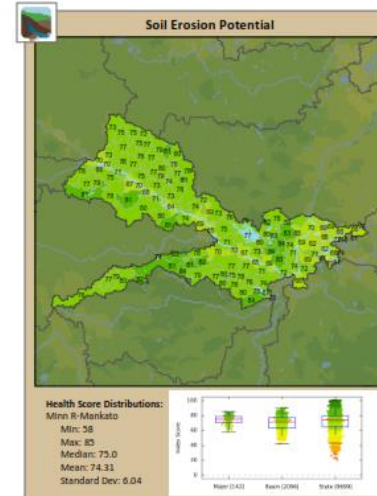
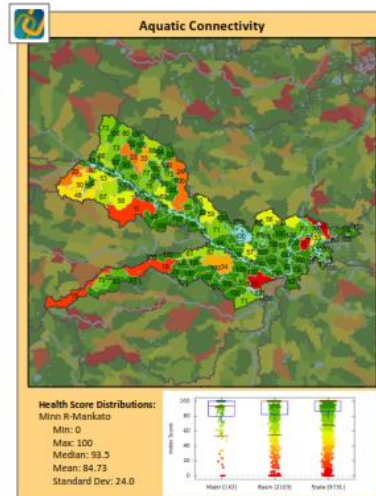
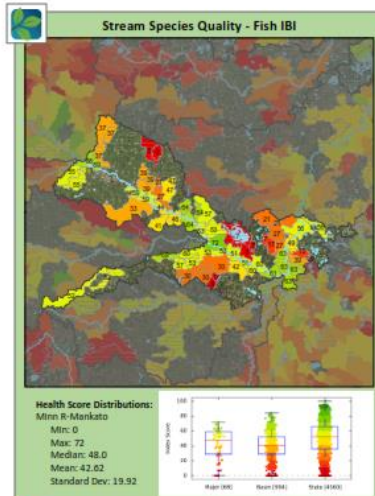
Watershed Health Assessment Framework
Health score methodology - www.dnr.state.mn.us/whaf/about/scores

September, 2015



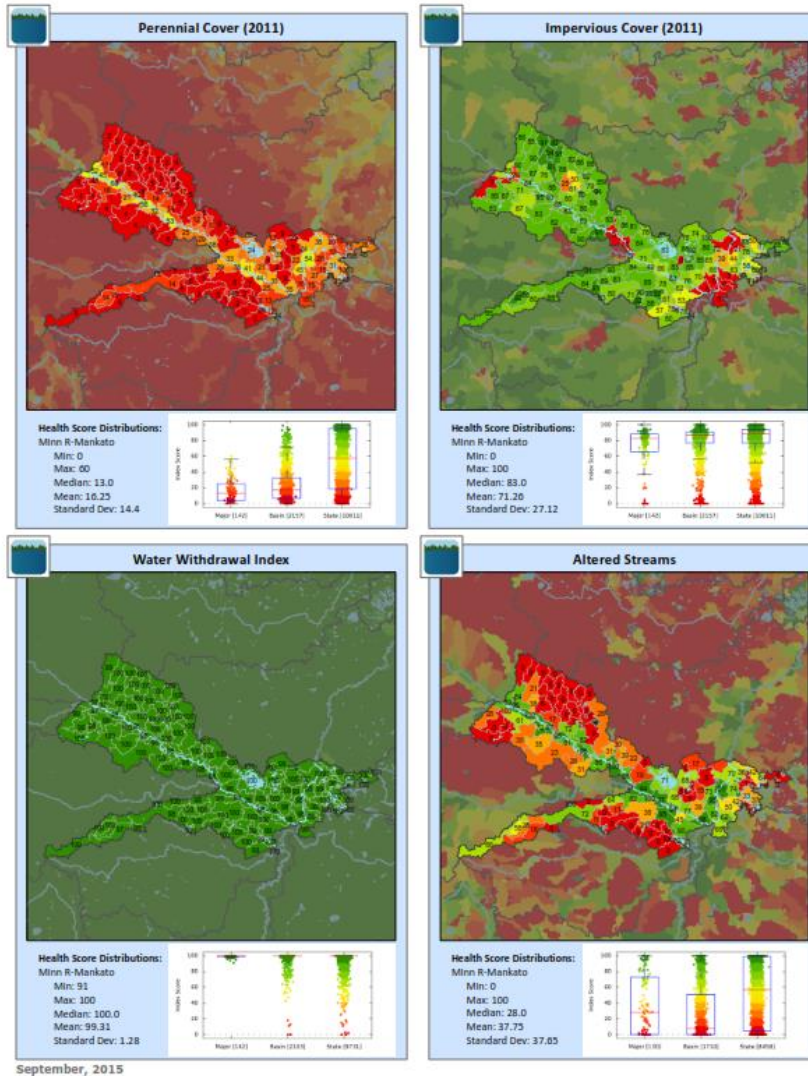
September, 2015

September, 2015



September, 2015

September, 2015

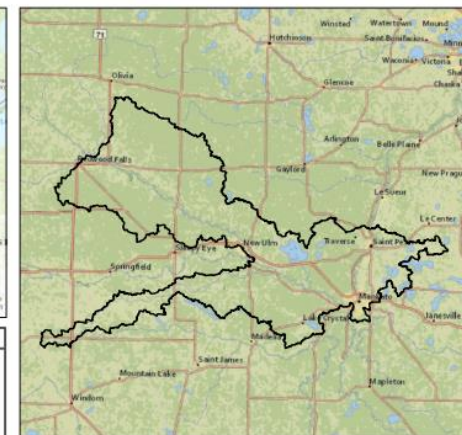


Watershed Health Assessment Framework

"Managing for System Health"



Watershed Report Card: Minn R-Mankato



People and Places:

Watershed Population:
2000 census - 87,781
2010 census - 95,035

Largest Cities - Population:

Mankato - 39,305
New Ulm - 13,522
North Mankato - 13,394
Saint Peter - 11,196
Lake Crystal - 2,549

Counties - % of watershed:

Nicollet - 24 %
Brown - 22 %
Renville - 18 %
Blue Earth - 13 %
Redwood - 11 %
Le Sueur - 6 %
Cottonwood - 3 %
Sibley - 3 %
Watonwan - 0 %

Watershed Area:

Watershed size:
861,885 acres
1,347 square miles

Watershed Surface Area:

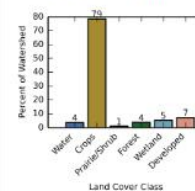
Percent Land - 96 %
Percent Water - 4 %

HUC8 ID:
07020007

Basin Name:
Minnesota (0702)

Land Use:

**Percent of watershed area
by land cover type:**

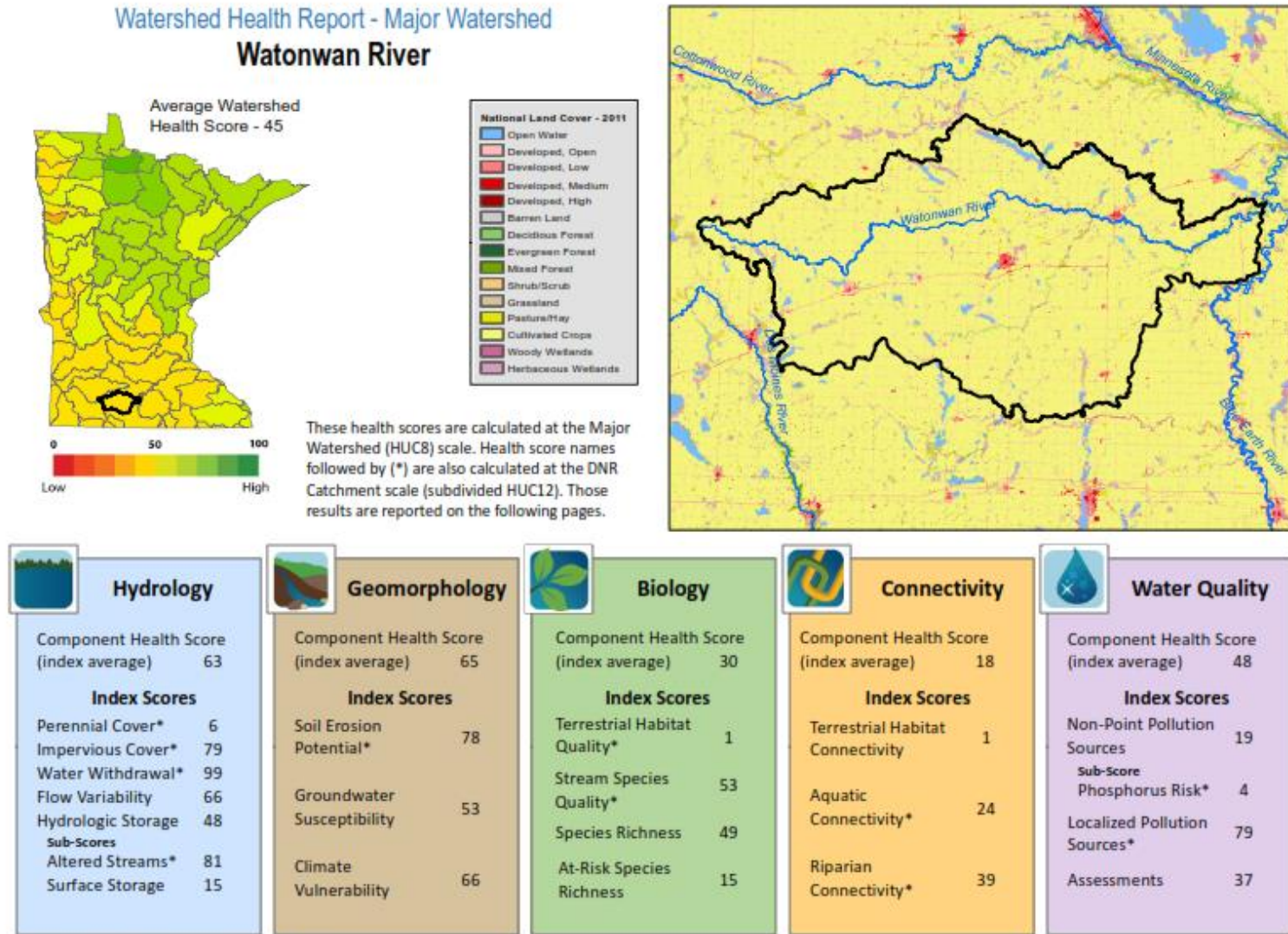


September, 2015

Report Card Found at MN DNR's website:

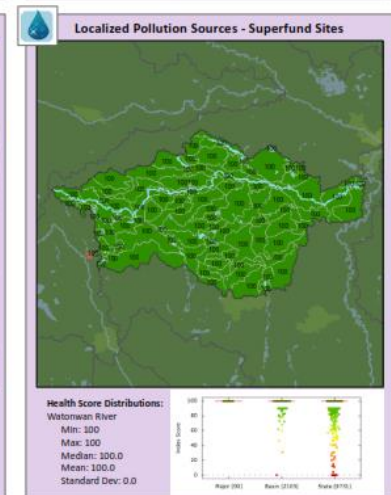
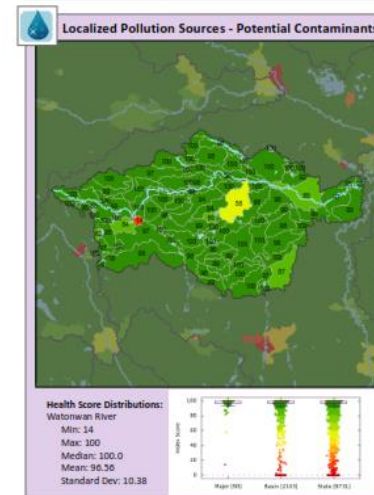
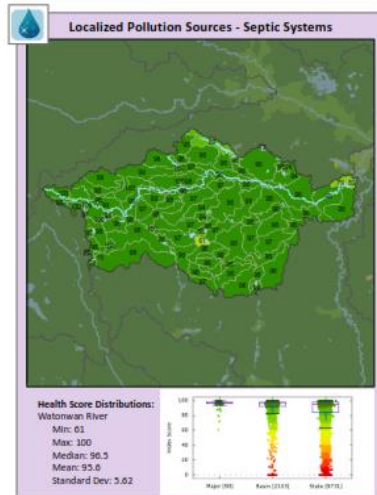
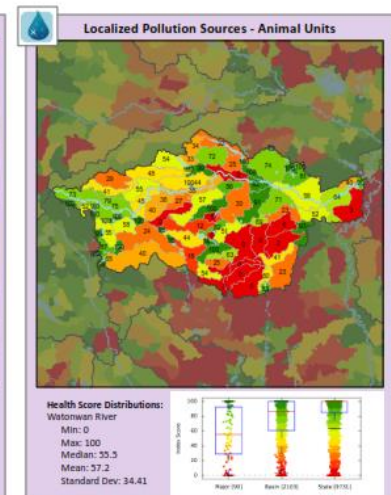
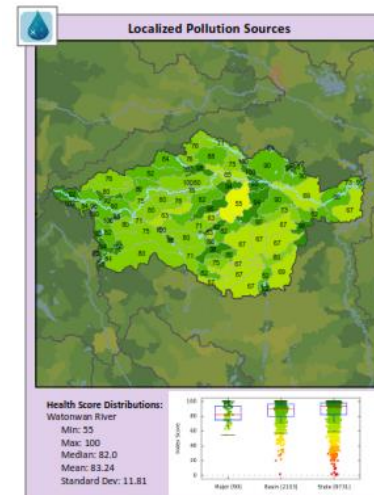
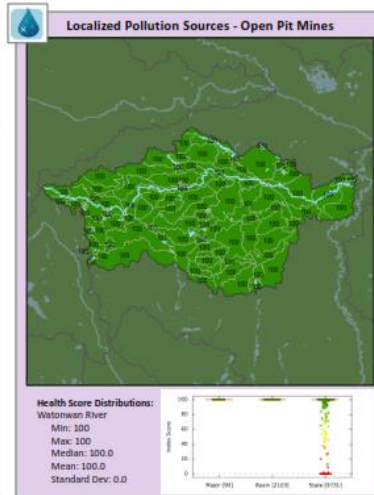
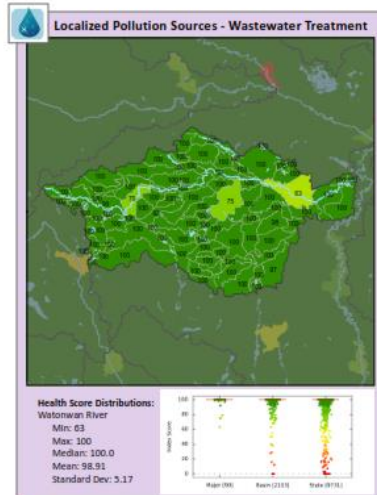
http://files.dnr.state.mn.us/natural_resources/water/watersheds/tool/watersheds/reportcard_indexmap.pdf

F.4 Watershed Report Card - Watonwan River



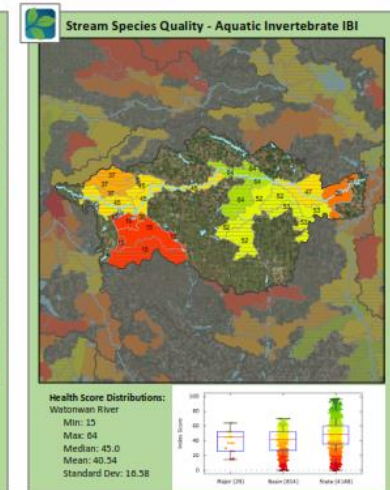
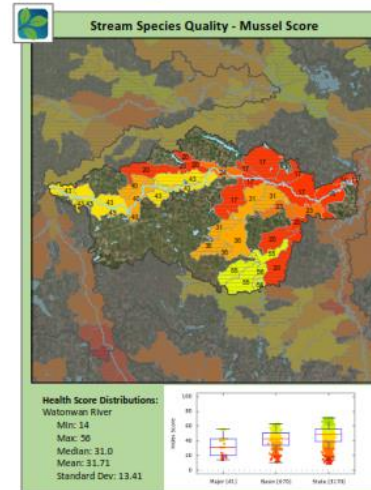
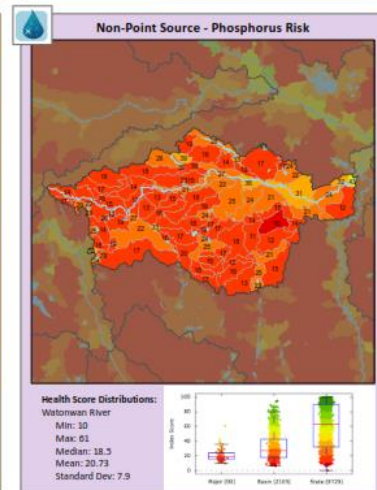
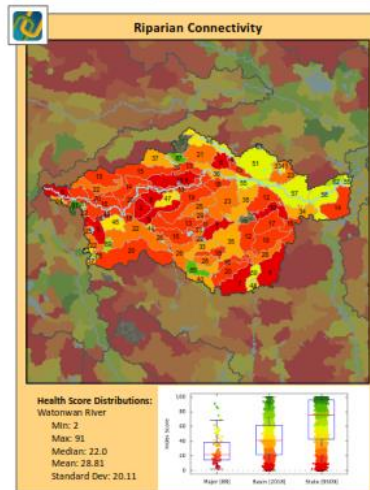
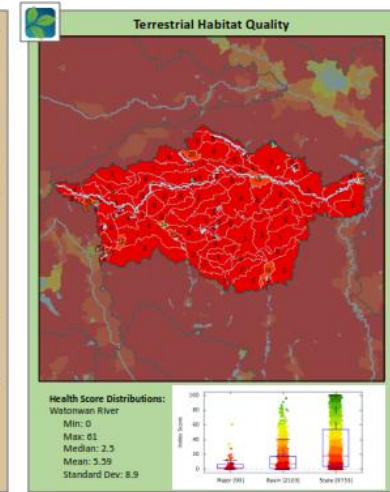
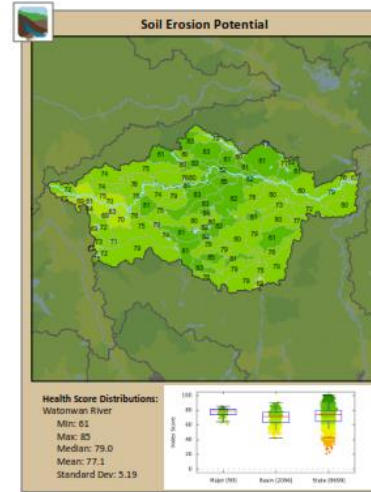
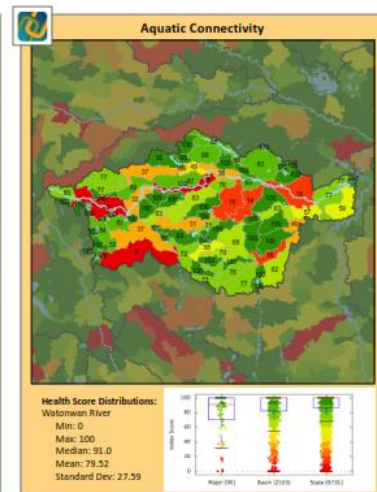
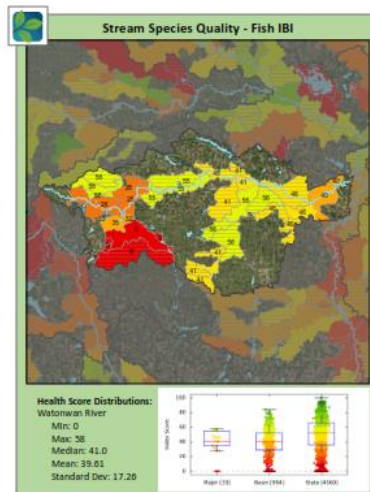
Watershed Health Assessment Framework
Health score methodology - www.dnr.state.mn.us/whaf/about/scores

September, 2015



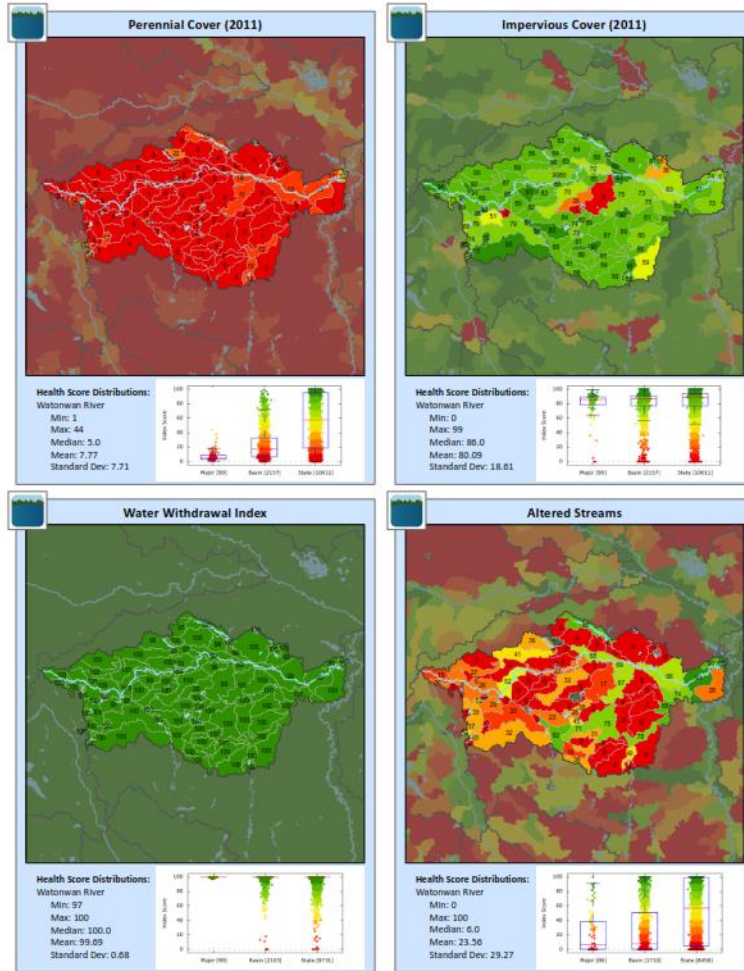
September, 2015

September, 2015



September, 2015

September, 2015



September, 2015



Watershed Health Assessment Framework

"Managing for System Health"



Watershed Report Card: Watonwan River



People and Places:

Watershed Population:
 2000 census - 19,030
 2010 census - 17,968

Largest Cities - Population:

Saint James - 4,605
 Madelia - 2,308
 Mountain Lake - 2,104
 Truman - 1,115
 Garden City - 689

Counties - % of watershed:

Watonwan - 50 %
 Cottonwood - 23 %
 Blue Earth - 11 %
 Martin - 9 %
 Brown - 6 %
 Jackson - 1 %

Watershed Area:

Watershed size:
 558,964 acres
 873 square miles

Watershed Surface Area:

Percent Land - 98 %
 Percent Water - 2 %

HUC8 ID:

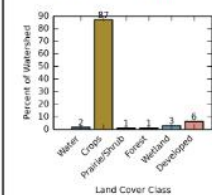
07020010

Basin Name:

Minnesota (0702)

Land Use:

Percent of watershed area by land cover type:

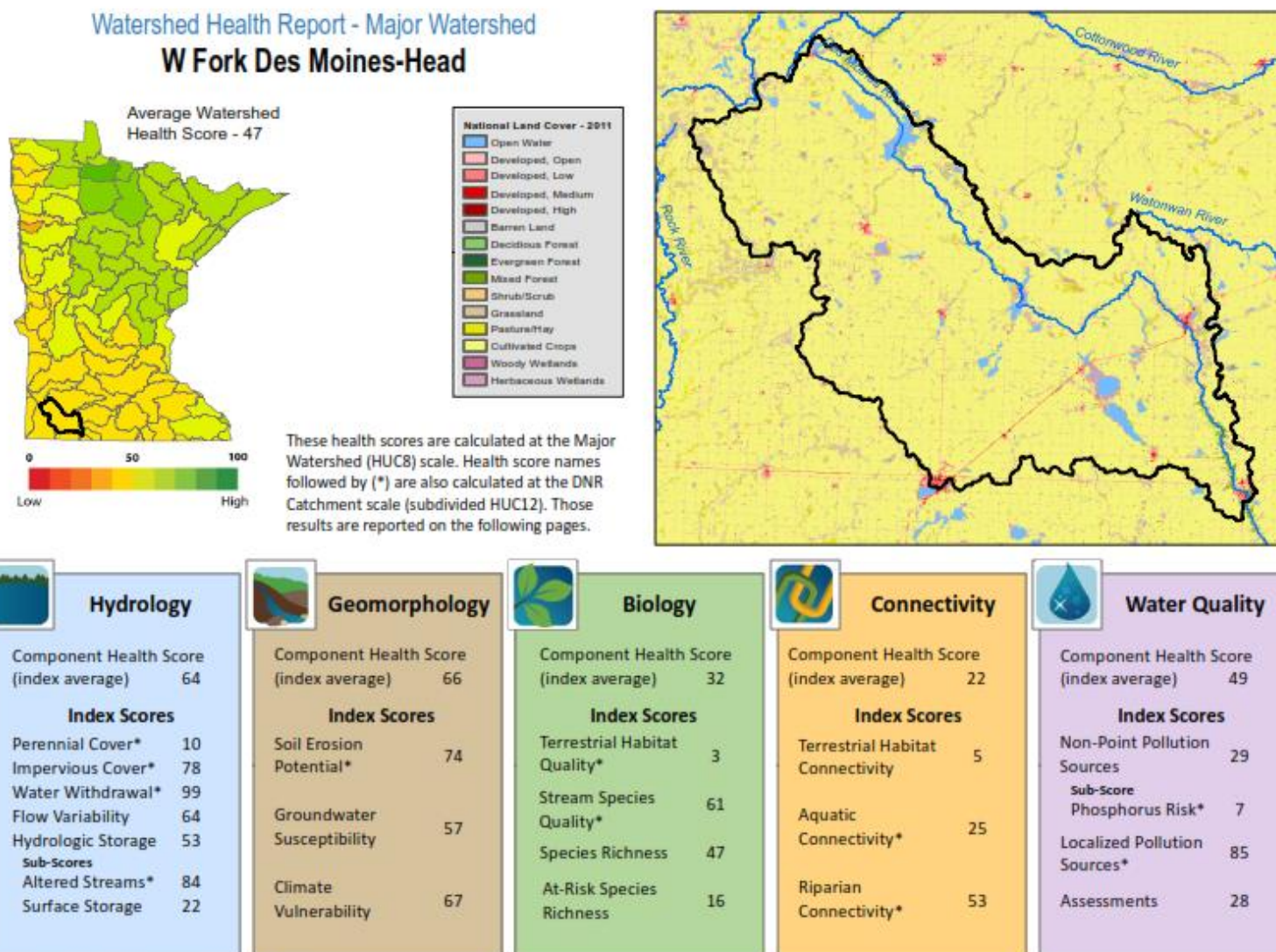


September, 2015

Report Card Found at MN DNR's website:

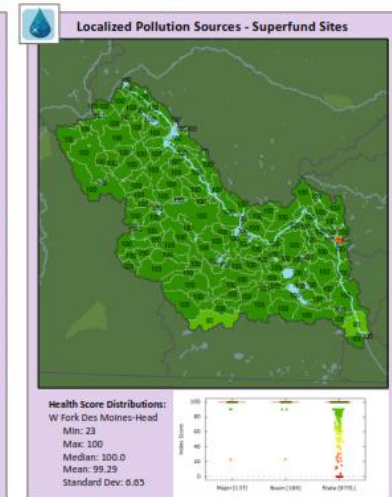
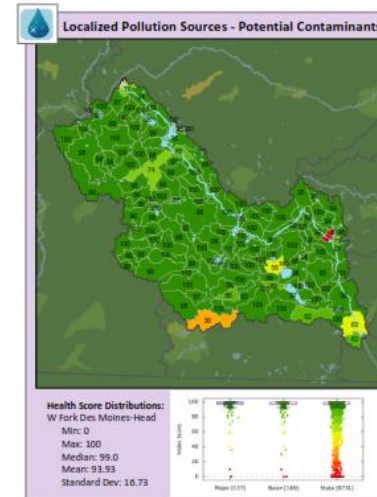
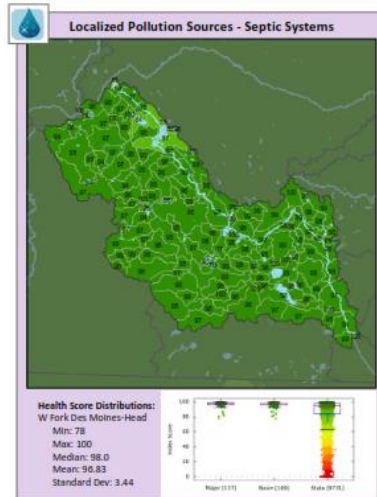
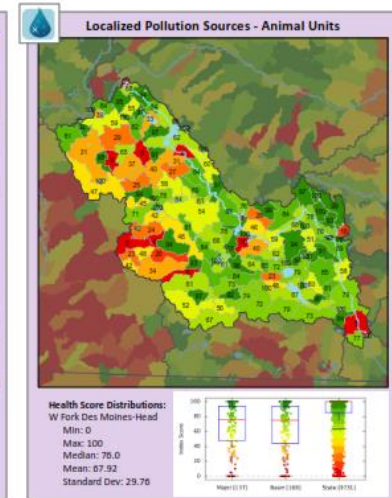
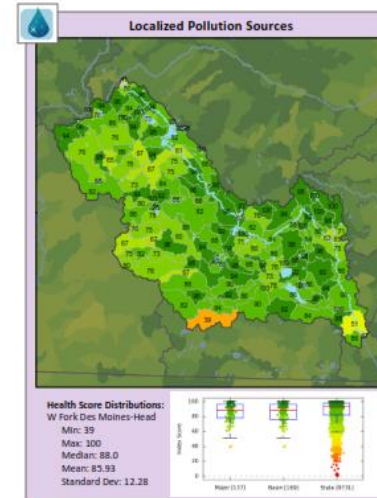
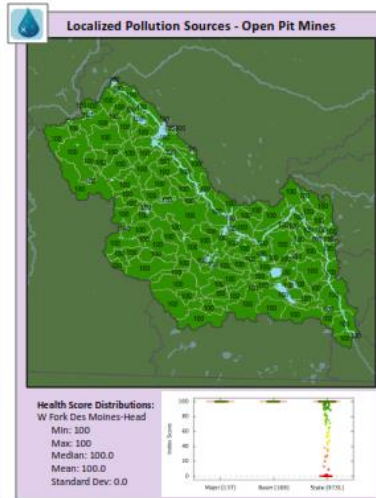
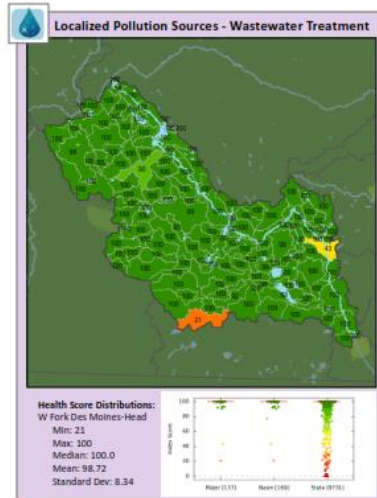
http://files.dnr.state.mn.us/natural_resources/water/watersheds/tool/watersheds/reportcard_indexmap.pdf

F.5 Watershed Report Card - West Fork Des Moines-Head



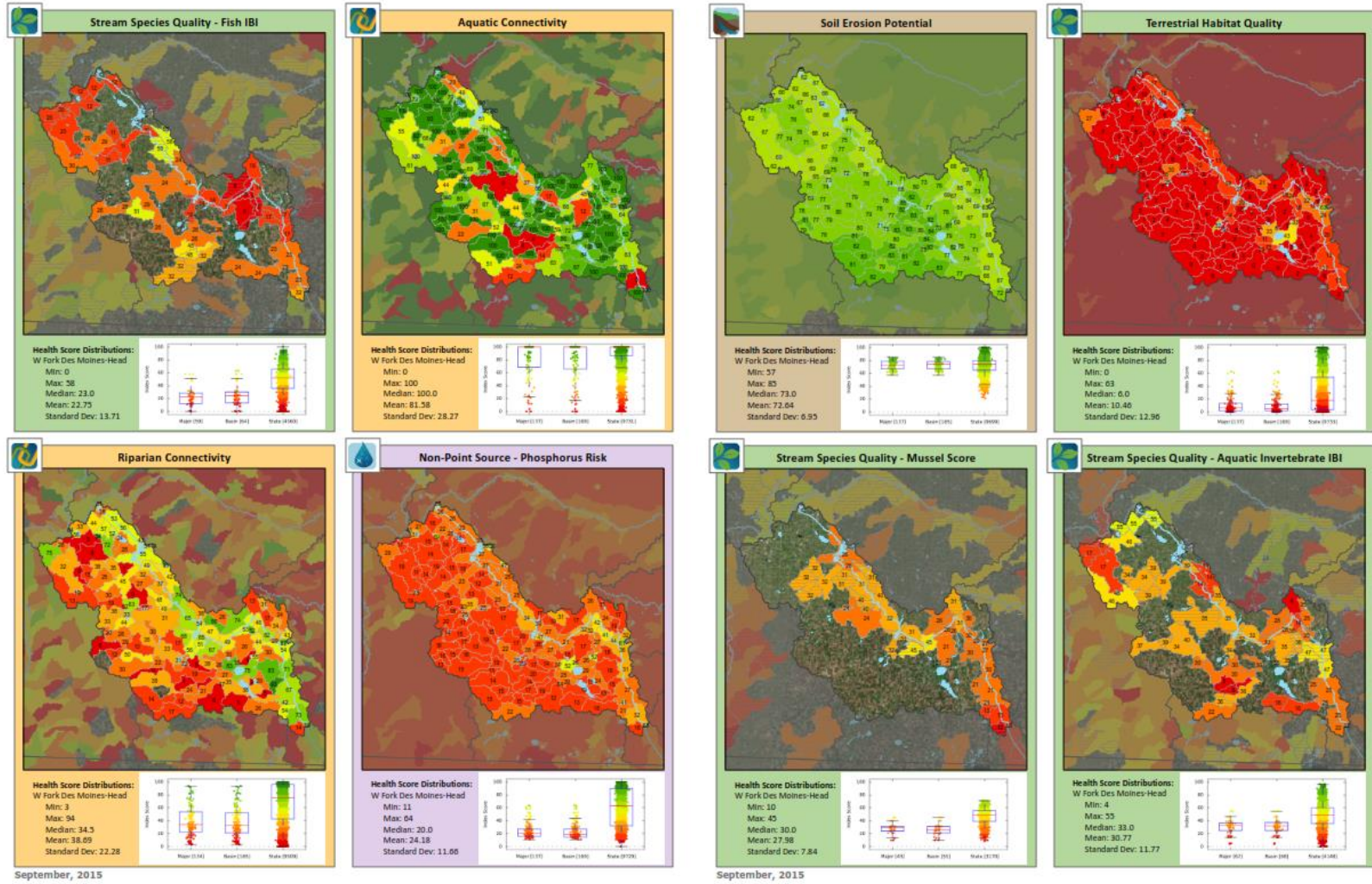
Watershed Health Assessment Framework
Health score methodology - www.dnr.state.mn.us/whaf/about/scores

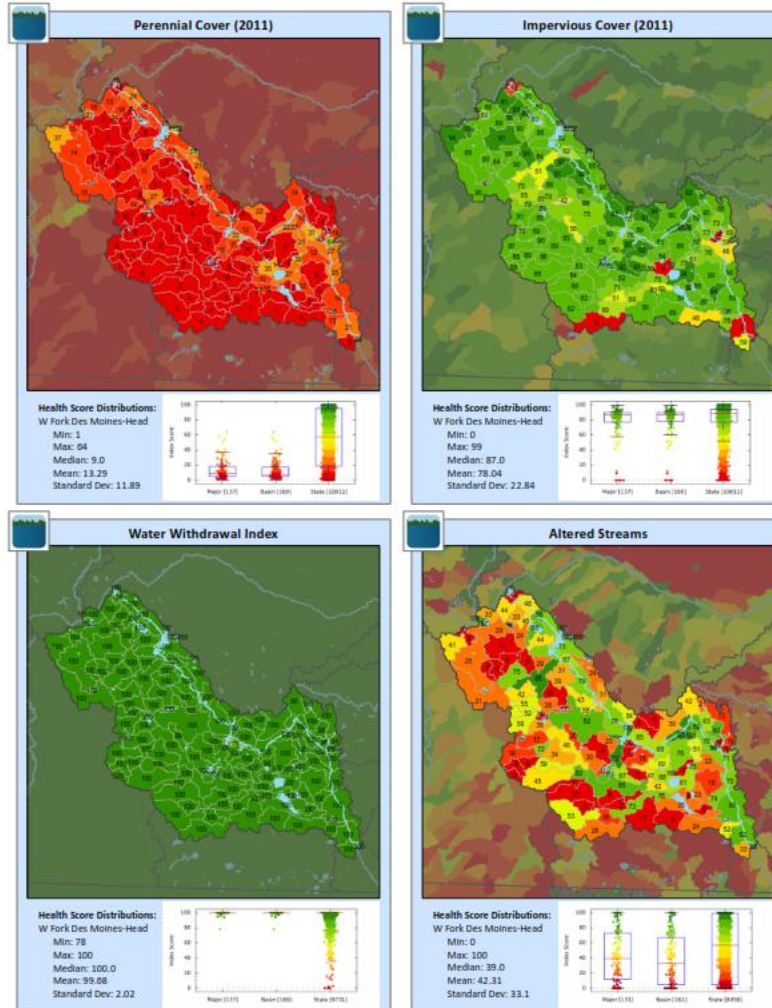
September, 2015



September, 2015

September, 2015





September, 2015



Watershed Health Assessment Framework

"Managing for System Health"



Watershed Report Card: W Fork Des Moines-Head



People and Places:

Watershed Population:
2000 census - 30,498
2010 census - 30,262

Largest Cities - Population:

Windom - 4,646
Jackson - 3,299
Slayton - 2,153
Lakefield - 1,694
Fulda - 1,318

Counties - % of watershed:

Murray - 41 %
Jackson - 24 %
Nobles - 18 %
Cottonwood - 13 %
Lyon - 2 %
Pipestone - 1 %

Watershed Area:

Watershed size:
798,597 acres
1,248 square miles

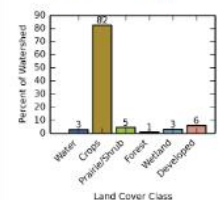
Watershed Surface Area:
Percent Land - 97 %
Percent Water - 3 %

HUC8 ID:
07100001

Basin Name:
Des Moines (0710)

Land Use:

Percent of watershed area by land cover type:



September, 2015

Report Card Found at MN DNR's website:

http://files.dnr.state.mn.us/natural_resources/water/watersheds/tool/watersheds/reportcard_indexmap.pdf

Cottonwood County



Comprehensive Local Water Management Plan 2017 - 2027

Scoping Document

COTTONWOOD COUNTY LOCAL WATER MANAGEMENT PLAN – SCOPING DOCUMENT

A 10-year plan with a 5-year implementation schedule. 2017-2027 Plan Update. 2016-2017

	<u>Page (CCCLWP Page)</u>
I. Table of Content	
A. Introduction	
1. County Primer	3 (85)
2. Plan Information	5 (85)
B. Priority Concerns Addressed by the Plan	
1. Description of Priority Concerns	6 (87)
C. Priority Concern Identification Process	
1. List of All Public and Internal Forums	7 (88)
2. Written Comments	8 (90)
3. Issues Identified	9 (91)
D. Priority Concern Selection Process	
1. Priority Concern Selection Description	9 (91)
2. Differences Between Priority Concerns and Other State, Local, or Regional Concerns	9 (91)
E. Priority Concerns Not Addressed by the Plan	
1. Description of Concerns Not Chosen	10 (92)
F. Appendix	
1. Acronyms	11 (93)
2. Cottonwood County Resolution	12 (94)
3. Invitation to Submit Priority Concerns	14 (96)
4. Cottonwood County Water Planning Task Force 3-31-16 Meeting Agenda	15 (97)
5. County Comprehensive Local Water Planning Checklist	16 (98)
6. Requirements of a Local Water Management Plan	18 (100)
7. Selecting Priority Concerns	19 (101)
8. Description of Priority Concerns for Cottonwood Co. (Prev.)	21 (103)
9. County Priority Concerns from Surrounding Counties	22 (104)
10. The Beef on Buffers	23 (105)
11. Task Force Calendar of Planned Meetings	24 (106)
12. Ad - Open House - Cottonwood Co. Water Plan Task Force	25 (107)
13. Todd Luke, USF&WS - Written Comments	26 (108)
14. Ed Lenz, BWSR - Written Comments	29 (111)
15. Rob Sip, MN Dept. of Ag. - Written Comments	32 (114)
16. Amanda Strommer- Written Comment	36 (119)
17. Wayne Cords, MPCA- Written Comments	38 (121)
18. Invite to Comment	46 (128)
19. Water Planning Task Force- Meeting Agenda 4/26/16	47 (129)

For additional information on water management in Cottonwood County, Minnesota, contact: Cottonwood Soil and Water Conservation District or Cottonwood County Land Management Offices 339 Ninth Street, Windom, MN 56101

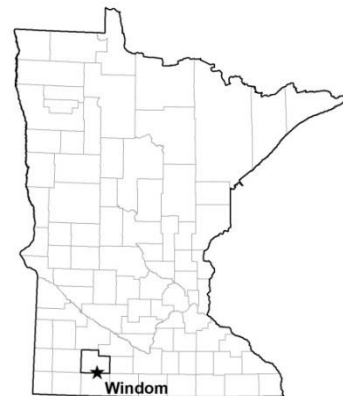
A. INTRODUCTION

1. County Primer

a. County Name and County Seat Location

Cottonwood County is in southwestern Minnesota, adjacent to Murray, Redwood, Brown, Watonwan, Jackson, and Nobles counties. The City of Windom is the county seat. Cottonwood County's population in the 2010 census was 11,687 and the City of Windom's population was 4,646.

The Coteau des Prairies - a conspicuous ridge extending northwest to southeast across the region - bisects Cottonwood County into two major drainages. Watersheds of the Cottonwood, Watonwan, and to a lesser extent the Little Cottonwood and Blue Earth, drain in a northeasterly direction into the Minnesota River, which meets the Mississippi River at St. Paul. The West Fork Des Moines River watershed drains south into Iowa and eventually into the Mississippi River.



Cottonwood County Water Plan Population	
2010 Population	
Amboy Township	164
Arno Township	132
Ann Township	179
Carson Township	280
Dale Township	151
Delton Township	123
Germantown Township	207
Great Bend Township	287
Highwater Township	166
Lakeside Township	237
Midway Township	219
Mountain Lake Township	384
Rosehill Township	166
Selma Township	193
Southbrook Township	79
Springfield Township	120
Storden Township	165
Westbrook Township	216
City of Bingham Lake	126
City of Comfrey (Part)	16
City of Jeffers	369
City of Mountain Lake	2,104
City of Storden	219
City of Westbrook	739
City of Windom	4,646
County	11,687
Source: MN State Demographic Center	

b. Population of County and Trends

Cottonwood County consists of seven (7) incorporated cities, one (1) unincorporated village, and eighteen (18) townships. The MN State Demographic Center reported that there are 11,687 residents in the county as of 2010, 3.9% less than the 12,167 people counted in the year 2000 US Census and 7.6% less than the 12,648 counted in 1990.

The number of households in the county as reported by the MN State Demographic Center is 4,857 households as of the 2010 census.

Geographically, US Highway 71 runs north-south through Windom. MN State Highway 30 and State Highway 62 run east-west across the county. MN State Highway 60 runs on a diagonal through Windom, Bingham Lake and Mountain Lake between Worthington and Mankato, providing a major link between the Twin Cities and Sioux City, Iowa. The Union Pacific Railroad runs parallel to Highway 60.

c. Dominant Land Use

Agriculture is the primary economic driver in the county, with some industrial businesses along Highway 60. The University of Minnesota found that about 82% of the land area in Cottonwood County was cultivated, with 7% in grass/shrub/wetlands, 6% urban and just over 1% covered by water in the year 2002 (Remote Sensing and Geospatial Analysis Laboratory). There were almost 5,300 acres of impervious area, or 1.3% of the county overall.

Cottonwood County is on the edge of the Midwestern humid area, with average annual precipitation of 23-29 inches (Minnesota's state-wide average is 27.01 inches). Average precipitation can vary from less than 17 inches (1955) to over 41 inches (1993). In 2010, over 40 inches of precipitation was observed (State Climatology Office DNR Waters at <http://climate.umn.edu/>). Previous editions of the Water Plan contain historical weather data and trends.

Southwestern Minnesota has a conspicuous feature called the Coteau des Prairies, meaning "highland of the prairies" or "hill of grasses", which bisects Cottonwood County. This is a ridge that extends northwest to southeast across South Dakota, Minnesota and on into Iowa. The rolling topography of the county consists of glacial till on top of Sioux Quartzite and Cretaceous sandstone bedrock. Depth to bedrock is variable, deepest in the western part of the county, with outcrops of Quartzite in the northeast. Pre-settlement vegetation consisted of grasslands and hardwood forests in river-bottom lands.

Five major watersheds cross the county borders. The three larger watersheds include the Cottonwood River Watershed which encompasses the north-central and western portion of the county covering about 245 square miles or 38% of the county land area; the Watonwan River Watershed which covers the eastern portion of the county and contains 198 square miles or 31% of the county land area; and the West Fork Des Moines River Watershed located in the southwestern and central portions of the county covering 165 square miles or 25% of the county land area. The two smaller watersheds include the Middle Minnesota Watershed (also called the Little Cottonwood River Watershed) which starts close to the center of the County and continues to the very northeastern edge of Cottonwood County covering 39 square miles or 6% of the land area; and the smallest one, the Blue Earth Watershed which covers only 1.3 square miles in the southeastern corner of the county. All but the Des Moines drain into the Minnesota River.

The following rivers and creeks drain within these watersheds:

- Cottonwood River Watershed: Dry Creek, Dutch Charley Creek, Highwater Creek, Mound Creek, Pell Creek
- Watonwan River Watershed: Watonwan River, North Fork of the Watonwan River, South Fork of the Watonwan River, Unnamed Branch
- West Fork Des Moines Watershed: Des Moines River, Heron Lake Outlet

- Middle Minnesota River Watershed: Little Cottonwood River
- Blue Earth River Watershed: no named streams

In addition to flowing creeks and streams, there are about 30 bodies of still water in Cottonwood County covering 5,824 acres of land and average about 170 acres each in size. Surface waters are typically undeveloped and most of the runoff and drainage water is not retained. High priority water quality problems are seen in areas where sediment, nutrients, chemicals or other pollutants discharge to DNR designated protected waters or to any high priority waters as identified in this plan, or discharge to a sinkhole or ground water. The pollutant delivery rate to the water source is in amounts that will impair the quality or usefulness of the water resource.

Typical land use and management practices have caused water quality degradation in all the County's lakes and streams. Due to the increase in nutrients in the water column, the County's lakes have seen an increase in algae blooms and other suspended sediments. With this decrease in water clarity, the sunlight is not able to reach all areas of the lake which restricts many kinds of plant growth. This not only eliminates a food supply for many game fish, but it also favors the growth of less desirable species such as carp and black bullhead. These fish then cause greater destruction to water bodies by uprooting other types of vegetation and sending more debris into the water column. (For more information on land use, see the Cottonwood County 2005 Comprehensive Plan).

2. PLAN INFORMATION

a. Identify the Responsible Local Government Unit

The Cottonwood County Commissioners have delegated the Cottonwood Soil and Water Conservation District, through resolution, the responsibility of coordinating, assembling, writing and implementing Cottonwood County Local Water Management Plan.

b. Date of Original Local Water Management Plan and Editions

This is the plan update for the fourth edition of the local water management plan for Cottonwood County. On August 18, 1987, the Cottonwood County Board of Commissioners adopted a resolution to develop a comprehensive local water plan according to Minnesota Statutes in effect at the time. A public hearing was held on September 24, 1991 where comments were heard by the County Board, and the plan adopted by the Cottonwood County Board of Commissioners after the 90-day review.

c. Expiration Date of Current Plan

The third edition of the local water management plan expires July of 2017. The County Board of Commissioners adopted a resolution on March 1, 2016 to update this plan, according to Minnesota Statutes now in effect with final adoption by July of 2017.

B. Priority Concerns Addressed by the Plan

1. Provide a Description of each Priority Concern

The Priority Concerns listed below were reviewed by the Water Task Force in 2016 and selected by the Water Plan Task Force members by consensus during the 2016-2017 plan development period. While the assessment of priority concerns utilized the best available data, this plan rests solidly on information and analysis contained in previous editions of the county's local water management plan.

Priority Concern 1. Improve Surface Water Quality.

Protecting soil from erosion is an ongoing challenge. Improved land use and agricultural best management practices are necessary to address the quality of lakes, wetlands and rivers. MPCA listing of impaired waters requires local strategies to meet Total Maximum Daily Load (TMDL) standards.

Priority Concern 2. Protect Groundwater.

Portions of Cottonwood County have enjoyed adequate groundwater supplies, while other areas have experienced difficulty with sufficient supply. There is increasing concern with groundwater quality and long-term supply. Efforts to protect groundwater should be focused on Drinking Water Supply Management Areas (DWSMA) and superficial aquifer areas.

Priority Concern 3. Drainage Management.

Waters flow across a landscape changed greatly by development. Management of the resulting drainage system – the modern hydrograph – is typically disjointed and uncoordinated, leading to issues with both quantity and quality of water.

Priority Concern 4. Feedlots & SSTS (Sub-Surface Sewage Treatment Systems).

Nutrient management plans and controlling feedlot runoff are important tools in preventing water quality issues. There are also many dispersed farmsteads and rural residential properties with outdated septic systems; there is a great need and demand to continue upgrades.

C. Description of Priority Concern Identification Process

1. List of Public and Internal Forums Held to Gather Input

a. Dates, Meetings, Attendees and Summary

- 3-1-2016 Cottonwood County Board of Commissioners approved resolution to update the local water management plan.
- 3-4-2016 Invitation to submit priority concerns for the update to the Cottonwood County Comprehensive Local Water Plan provided by email and/or postal service to local units of government, organizations and responsible agencies as suggested and required. (71 notices mailed).
- 3-11-2016 Notice of 'Kick-Off' Meeting for the Water Plan Task Force and the beginning of the water plan revision process.
- 3-31-2016 Meeting with Water Plan Task Force to review the water plan update process and discuss priority concerns. (Attendance 14)
- 4-6-2016 Cottonwood County Water Task Force 'Open House' was held at the Cottonwood SWCD/ County Land Management Office. (Attendance 12)

4-26-2016 Water Task Force Meeting – Focus – Priority Concerns and Public Response Received to Date. (Attendance 7)

b. List of Participants and Affiliated Organizations

2016-2017 Local Water Management Plan Task Force Members

- Tom Appel, Cottonwood County Commissioner
- Becky Alexander, Cottonwood Soil and Water Conservation District
- Dave Bucklin, Cottonwood Soil and Water Conservation District
- Bruce Gross, Des Moines Valley Deer Hunters Association
- Kay Gross, Cottonwood Soil and Water Conservation District
- Renee Harnack, Cottonwood Soil & Water Conservation District
- Mike Haugen, City of Windom
- Dominic Jones, Red Rock Rural Water System
- Clark Lingbeek, Selma Township, Cottonwood Soil and Water Conservation District, Pheasants Forever, Agriculture
- Wendy Meyer, City of Mountain Lake
- Jared Morrill, Cottonwood County Land Management Office
- Kerry Netzke, Redwood-Cottonwood Rivers Control Area/Area II River Basin Inc.
- Erin Nordquist, West Fork Des Moines River Watershed
- Kelly Pfarr, Natural Resources Conservation Service
- Daryl Tasler Cottonwood Soil and Water Conservation District Supervisor, Ducks Unlimited, Agriculture
- Sharon Tibodeau, Cottonwood County Planning Commission
- Jan Voit, Heron Lake Watershed District

Other Participants

- Ed Lenz, Board of Water and Soil Resources
- Brian Nyborg, MN Department of Natural Resources

c. Supporting Data from Proceedings (See Appendix)

- Cottonwood County Resolution 16-03-01A (See Appendix 2)
Resolution to Update the Cottonwood County Comprehensive Local Water Management Plan
- Invitation to Submit Priority Concerns for the Update to the Cottonwood County Comprehensive Local Water Management Plan (See Appendix 3)
- Handouts – Cottonwood County Water Planning Task Force Meeting – 3-31-16
Agenda (See Appendix 4)
County Comprehensive Local Water Planning Checklist (See Appendix 5)
Requirements of a Local Water Management Plan (See Appendix 6)
Selecting Priority Concerns (See Appendix 7)
Description of Priority Concerns for Cottonwood County (Previous)
(See Appendix 8)
County Priority Concerns from Surrounding Counties (See Appendix 9)
The Beef on Buffers (See Appendix 10)
Task Force Calendar of Planned Meetings (See Appendix 11)
- Ad – Open House – Cottonwood County Water Plan Task Force (See Appendix 12)
- Handouts - Cottonwood County Water Planning Task Force Meeting - 4-26-16
Agenda (See Appendix 17)

2. Written Information and Comments Received

a. Public Comments (Verbal) – Open House

Consideration of urban runoff in new developments for the City of Windom.

Interest in bee pollinators and urban runoff.

Buffer discussion private versus public waters.

Updating of all septic systems in Cottonwood County.

b. Written Comments – State Agencies

4-19-2016 Todd Luke, District Manager, USF&WS. Email correspondence referencing the benefits of water retention projects, referencing a project completed in Jackson County on JD 33 bringing together ag and conservation interests to complete a 70-acre wetland restoration/water storage project. (See Appendix 13)

4-21-2016 Ed Lenz, Board Conservationist, Board of Water and Soil Resources.
Correspondence: (See Appendix 14)

- Encouraging the inclusion of the County Drainage Authority as a stakeholder in the planning process.
- Consideration of high-level state priorities, keys to implementation, and criteria for evaluating proposed activities in the NPFP (Nonpoint Priority Funding Plan) to access Clean Water Funds.
- Watershed Restoration and Protection Strategies (WRAPS) development for the Watonwan, Cottonwood, Middle Minnesota and West Fork Des Moines Watersheds are ongoing and may provide identified stressors and priority locations within all four watersheds.
- BWSR recommends the use of the TMDL Report for the West Fork Des Moines River (EPA 2008) when considering implementation efforts.
- Data collection and monitoring activities necessary to support implementation schedules and to reasonably assess and evaluate plan progress.
- Emerging issues including but not limited to riparian buffer protections, drainage technology, urban stormwater management, conversion of grassland, changes in crop rotations and cover crops.
- Groundwater issues and Drinking Water Supply Management areas should be considered with development of priority concerns.

4-21-2016 Rob Sip, Environmental Policy Specialist, MN Department of Agriculture
Correspondence: (See Appendix 15)

- Drainage Water Management – MDA recommends additional effort be focused on encouraging landowners and farmers to implement DWM practices and management plans.

- Water Storage – MDA recommends that Cottonwood County along with its water management partners consider the development of a water storage plan for both public drainage systems and for private on-farm water storage.
 - Wind and Water Erosion – MDA recommends that the Cottonwood County water plan focus and renew efforts to reduce wind and water erosion and that efforts continue to implement more conservation practices such as water and sediment control basins, grassed waterways, etc., in priority areas.
 - Lake Management – MDA recommends that a process be considered for development to prioritize lake management and protection efforts in Cottonwood County.
- 4-22-16 Amanda Strommer, Principal Planner, Minnesota Department of Health
- Correspondence: (See Appendix 16)
- Wellhead Protection Areas - MDH recommends continued consideration of Wellhead Protection areas in Land Use decisions
 - Abandoned Wells - MDH recommends Continued Support of Locating and Properly Sealing Abandoned Wells
 - Using Current Data - MDH recommends Further Evaluation and use of WRAPS and 1W1P watershed planning to prioritize drinking water protection activities
 - Data Collection - MDH Support Ongoing Data Collection Efforts around Wellhead Protection Areas

3. List of Issues Identified by the Stakeholders

- Upgraded Septic Systems throughout the County- Bruce Gross
- Urban Stormwater Management in New Developments-Margaret Horkey
- Pollinator Habitat and Urban Stormwater – Jim and Coralee Krueger
- Buffers – Bruce Gross, Tom Appel, SWCD and County Staff
- Septic Upgrades – Donna Gravely

D. Description of Priority Concern Selection Process

1. Priority Concern Selection

Priority Concerns for local water management were selected by the Cottonwood County Local Water Management Plan Task Force members after reviewing a list of Priority Concerns collected from surrounding Counties, and also the concerns submitted by state and local agencies and other stakeholders during the 2016-2017 planning sessions.

Concerns were presented at the Water Task Force Meetings and discussed and implemented into the water management plan Priority Concerns.

2. Differences Between the Plan's Priority Concerns and Other State, Local and Regional Concerns

The Cottonwood County Land Management Office administers the County's comprehensive land use plan and zoning ordinance. The Cottonwood SWCD and the

Cottonwood County Land Management Office work closely together to ensure that environmental issues are handled consistently throughout Cottonwood County. The Cottonwood County 2005 Comprehensive Plan identifies issues, goals, objectives, policies and tasks that have been reviewed for consistency with the 2017 water management plan.

Comments on the Cottonwood County Water Plan were received by multiple agencies and organizations. There was consistency between state, local, and regional concerns and the Priority Concerns which were adopted. There were no substantial differences and no need to enter into a process to resolve differences.

E. Priority Concerns Not Addressed by the Plan

1. Brief Description on why each Concern Submitted for Consideration was not Chosen.

Throughout the process of determining Priority Concerns there was much consistency between the recommendations received and the Priority Concerns chosen. In many instances commenters went beyond recommending Priority Concerns and began recommending action steps to address the concerns. These action step recommendations will be considered when developing goals and objectives.

F. Appendix

1. Acronyms Used

AgBMPs - Agricultural Best Management Practices
Area II - Area II Minnesota River Basin Projects, Inc.
BWSR - Board of Water and Soil Resources
BNC - Brown Nicollet Cottonwood Joint Powers Water Quality Board
CDP - Census Designated Place
CRP – Conservation Reserve Program
CWF – Clean Water Fund
CWP - Clean Water Partnership
DMP – Drainage Management Plan
DNR - Department of Natural Resources
DWSMA - Drinking Water Supply Management Area
Env – Cottonwood County Environmental Office
GIS - Geographic Information Systems
GBERBA - Greater Blue Earth River Basin Alliance
HLWD - Heron Lake Watershed District
LCMR - Legislative Commission on Minnesota Resources
L&CRWS - Lewis & Clark Rural Water System
MDA - Minnesota Department of Agriculture
MDH - Minnesota Department of Health
MPCA - Minnesota Pollution Control Agency
NRCS - Natural Resources Conservation Service
NWI - National Wetlands Inventory
PF - Pheasants Forever
RCRCA - Redwood-Cottonwood Rivers Control Area
RIM – Reinvest in Minnesota Program
RRRWS - Red Rock Rural Water Systems
SSTS - Subsurface Sewage Treatment System
SWCD - Soil and Water Conservation District
TMDL - Total Maximum Daily Load
USCOE - United States Corp of Army Engineers
USDA - United States Department of Agriculture
USF&WS - United States Fish and Wildlife Service
WRP - Wetland Reserve Program

2.Cottonwood County Resolution



Board of County Commissioners Cottonwood County

900 Third Avenue

Windom, Minnesota 56101

Phone: 507.831.5669

FAX: 507.831.1183

E- mail: kelly.thongvivong@co.cottonwood.mn.us

Website: www.co.cottonwood.mn.us

Chairperson:

Kevin Stevens
Second District
680 Plum Avenue
Windom, MN 56101
507-831-4969

Vice-Chairperson:

Tom Appel
Fifth District
36810 County Rd 8
Mt. Lake, MN 56159
507-427-3825

Members:

Jim Schmidt
First District
530 Edison Avenue
Westbrook, MN 56183
507-274-6568

Donna Gravley
Third District
1158 Prospect Avenue
Windom, MN 56101
507-831-3638

Norman Holmen
Fourth District
28606 County Road 1
Comfrey, MN 56019
507-877-3243

County

Coordinator
Kelly Thongvivong
900 Third Ave.
Windom, MN 56101
507-831-5669

RESOLUTION 16-03-01A

**Resolution to Update the Cottonwood County
Comprehensive Local Water Management Plan**

Whereas, Minnesota Statutes, §103B.301, Comprehensive Local Water Management Act (Act), authorizes Minnesota counties to develop and implement a Comprehensive Local Water Management Plan, and

Whereas, the Act requires that a county update and revise their Comprehensive Local Water Management Plan on a periodic basis, and

Whereas, the Act encourages that a county coordinate its planning with contiguous counties, and solicit input from local governmental units and state review agencies, and

Whereas, the Act requires that plans and official controls of other local governmental units be consistent with the Comprehensive Local Water Management Plan, and

Whereas, Cottonwood County has determined that the revision and continued implementation of a Comprehensive Local Water Management Plan will help promote the health and welfare of the citizens of Cottonwood County, and

Now, Therefore, Be it Resolved, that the Cottonwood County Board of Commissioners resolve to revise and update its current Comprehensive Local Water Management Plan.

Be it Further Resolved that Cottonwood County will coordinate its efforts in the revision and update of its Comprehensive Local Water Management Plan with all local units of government within the county, and the state review agencies; and will incorporate where appropriate any existing plans and rules which have been developed and adopted by watershed districts having jurisdiction wholly or partly within Cottonwood County into its Comprehensive Local Water Management Plan.

Be it Further Resolved that the Cottonwood County Board of Commissioners authorizes the establishment of a Water Management Advisory Task Force with the responsibility of revising and updating the plan and who shall report to the County Board on a periodic basis.

Be it Further Resolved that the Cottonwood County Board of Commissioners delegates the Cottonwood Soil and Water Conservation District the responsibility of coordinating, assembling, writing and implementing the revised Comprehensive Local Water Management Plan pursuant to Minnesota Statutes, §103B.301.

**STATE OF MINNESOTA
COUNTY OF COTTONWOOD**

I do hereby certify that the foregoing resolution is a true and correct copy of a resolution presented to and adopted by the County of Cottonwood at a duly authorized meeting thereof held on the **1st of March, 2016**.



Kevin Stevens, Cottonwood County Board Chairman

3. Invitation to Submit Priority Concerns for the Update to the Cottonwood County Comprehensive Local Water Management Plan



COTTONWOOD
SOIL AND WATER CONSERVATION DISTRICT

339 9th Street
Windom, MN 56101

Phone: 507-831-1153 Ext. #3
Fax: 507-831-2928

DATE: MARCH 4, 2016

TO: KAY GROSS
COTTONWOOD SWCD

FROM: KAY GROSS
COTTONWOOD SOIL AND WATER CONSERVATION DISTRICT

SUBJECT: INVITATION TO SUBMIT PRIORITY CONCERNS FOR THE UPDATE TO THE
COTTONWOOD COUNTY COMPREHENSIVE LOCAL WATER MANAGEMENT PLAN

The Cottonwood County Board of Commissioners adopted a resolution on March 1, 2016 requiring the update and revision of the Comprehensive Local Water Management Plan (Plan), as authorized under the Comprehensive Local Water Management Act, Minnesota Statutes, §103B.301. The Plan will focus on priority water management concerns.

The county invites all recipients of this notice to submit water management issues they feel the Plan should address. For each issue submitted, please consider including the following information:

1. Why is it important the plan focus on this issue or concern (include or cite relevant data)?
2. What actions are needed to address the concern?
3. What resources may be available to accomplish the actions (include contact names, funding sources, partnerships, citizen volunteers, etc.)?
4. What specific areas of the county are highest priority in regards to this issue?

Also, please submit any water and related land resources plans and official controls so that these items can be reviewed to ensure consistency with the Comprehensive Local Water Management Plan. These items may be submitted as a website link.

In addition, the Cottonwood SWCD and Cottonwood County Land Management Office will be holding an **OPEN HOUSE – Wednesday, April 6, 2016 at the Cottonwood SWCD Office from 2:00 p.m. to 6:00 p.m.** Please take a moment to stop in and talk to our staff about the County Comprehensive Local Water Management Plan and our process for completing the necessary revisions.

Please submit the requested information or direct inquiries by Friday, April 22, 2016, to:

Kay Gross
District Administrator
Cottonwood Soil and Water Conservation District
339 9th Street
Windom, MN 56101
507-831-1153 Ext. 3
kay.clark@windomnet.com

*Cottonwood Soil and Water Conservation District Mission . . .
To help maintain a better environment for future generations, to encourage the wise use of our soil and water through programs and education.*

4. Cottonwood County Water Planning Task Force Meeting- 3-31-16 Agenda



Cottonwood Soil and Water
Conservation District
&
Cottonwood County



Cottonwood County Water Planning Task Force Meeting
Thursday, March 31, 2016 ~ Law Enforcement Center ~ Windom, MN

AGENDA

Introductions

Kay Gross, District Administrator

Requirements of a Local Water Management Plan

Selecting Priority Concerns for Cottonwood County

- Priority Concern 1. Improve Surface Water Quality
- Priority Concern 2. Protect Groundwater
- Priority Concern 3. Feedlots and SSTS
(Subsurface Sewage Treatment Systems)
- Others.....
 - Drainage Management
 - Buffers
 - Water Quality Concerns (TMDLS)
 - Wetlands

Final Comments and Questions

Open House
Next Meeting

Wednesday, April 6
Tuesday, April 26

2 – 4 p.m. Cottonwood SWCD Office
1 – 3 p.m. Law Enforcement Center

5. County Comprehensive Local Water Planning Checklist



County Comprehensive Local Water Planning

An Overview and Checklist of the Plan Update Process

July 2015

This document provides a general overview of the steps to update a comprehensive local water management plan, or county water plan. The details of each of these steps are provided in the [County Water Plan Update Guide](#).

Initiate the Update Process

The initial steps in the County Water Plan update process should begin 18 months to two years prior to plan expiration.

- ☒ Review the [County Water Plan Update Guide](#) with the [Board Conservationist](#).
- ☒ County Board passes a resolution to update the plan and sends copy to Board Conservationist. This resolution may also delegate preparation of the plan.
- ☐ Outline a public input process (including at least one legally noticed public information meeting).
- ☐ Discuss the revision process with the Advisory Task Force.

Develop the Priority Concerns Scoping Document

Development of the Priority Concerns Scoping Document (PCSD) generally takes 4-6 months to gather information and draft the document. While the PCSD is in the comment stage, the county may proceed with assessing the priority concerns.

- ☒ Send notification of intent to update the plan and request input (allow 45 days) to the entities required by Minnesota Statutes §103B.313 (see the [County Water Plan Update Guide](#)). State review agency routing information and template language for requesting input is available on the [County Comprehensive Local Water Management](#) page of the BWSR Website.
- ☐ Implement the public input process (including at least one legally noticed public information meeting).
- ☐ Convene the Advisory Task Force, and technical committee if used, to consider input received and select priority concerns and conduct other meetings as needed to coordinate and resolve differences between the water plan's priority concerns and other state, local, and regional concerns.
- ☐ Draft the PCSD following the outline in the [County Water Plan Update Guide](#). Reconvene the Advisory Task Force as necessary to finalize the priority concerns.

Submitting the Priority Concerns Scoping Document

Once the PCSD has been drafted, it should be submitted for the official review and comment process. This process takes about 60 days, depending on when it is submitted. Consult your BWSR Board Conservationist to assist with best timing for submittal.

- ☐ Submit the PCSD to the state review agencies. State review agency routing information is available on the [County Comprehensive Local Water Management](#) page of the BWSR Website.
- ☐ State agencies have 30 days from receipt to provide comments on the PCSD to BWSR. BWSR staff will confirm with the agencies that they received the PCSD.
- ☐ BWSR staff will schedule a BWSR Regional Committee meeting to discuss and make a recommendation on the PCSD. You may be asked to attend and present the PCSD to the Committee.
- ☐ BWSR Board will review the comments drafted by the Regional Committee and take action.
- ☐ BWSR staff will send official comments to the county after BWSR Board action.

Develop the County Water Plan

After approval of the PCSD, the next step is to draft the water plan. Development of the plan can take 3-6 months and the approval process up to an additional 90 days.

- ☐ Request information and assistance from the state review agencies and hold meetings as necessary to assess priority concerns (this can begin prior to PCSD approval).
- ☐ Develop goals, objectives, and an implementation program to address the priority concerns - including ongoing activities coordinated by the plan - in consultation with partners.
- ☐ Draft the plan following the outline in the [County Water Plan Update Guide](#); convening the Advisory Task Force as necessary.
- ☐ Schedule and conduct a legally noticed public hearing regarding the plan.
- ☐ Submit the plan, a record of the public hearing, and all written comments received to the state review agencies according to the instructions in the [County Water Plan Update Guide](#). State review agency routing information is available on the [County Comprehensive Local Water Management](#) page of the BWSR Website.
- ☐ After consulting with the state review agencies, BWSR staff will schedule a BWSR Regional Committee meeting to discuss and make a recommendation on the Plan. You may be asked to attend and present the Plan to the Committee.
- ☐ BWSR Board will take action within 90 days of receipt of the final plan at the regional office. BWSR staff will send official notice to the county after BWSR Board action.

Final Plan Adoption and Implementation

The county has 120 days after approval to adopt the plan and begin implementation, and about another year to coordinate the plan with local governments within the county.

- ☐ If BWSR approves the plan, the county adopts the plan through resolution within 120 days and sends a copy of the resolution to the Board Conservationist.
- ☐ After adoption, the county must notify local units of government (LGUs) of the adoption, and these LGUs must submit existing water and related land resources plans and official controls to the county board for review within 90 days.
- ☐ The county then identifies any inconsistency between the LGU plans and official controls and the county water plan and recommends the amendments necessary to bring these plans into conformance.
- ☐ LGUs must enact amendments to their plans and official controls within 180 days.
- ☐ The county should notify BWSR when this process has been completed.

6. Requirements of a Local Water Management Plan

Requirements of a Local Water Management Plan

As a general-purpose unit of government with their planning and land-use authorities, counties are uniquely positioned to link many land-use decisions with local goals for surface and groundwater protection and management. Through the Comprehensive Local Water Management Act, counties are encouraged to make this link through the development and implementation of Comprehensive Local Water Management Plans.

According to the Act, county water plans must:

- Cover the entire area within a county;
- Address water problems in the context of watershed units and groundwater systems;
- Be based upon principles of sound hydrologic management of water, effective environmental protection, and efficient management;
- Be consistent with local water management plans prepared by counties and watershed management organizations wholly or partially within a single watershed unit or groundwater system;
- Cover a period of at least five years and no more than ten years; and
- Fully utilize existing water and related land resources plan; including plans related to agricultural land preservation programs.

Selecting Priority Concerns

As defined in Minnesota Statutes §103B.305—means the issues, resources, subwatersheds, or demographic areas that are identified as a priority by the county.

- Use the following guidelines when selecting priority concerns:
- The priority concerns describe an existing or anticipated problem or identify a specific resource or area targeted for management, preservation, or improvement.
- The number of priority concerns should be limited and commensurate with the duration of the plan and the resources available to implement solutions.
- The character of the priority concerns is specific in scope (i.e., not general or broad).
- An ongoing water resource management issue in the county that has generated major concern or conflict should be selected or an explanation will be provided why it will not be addressed in the plan.

The priority concerns are agreed upon only after all relevant input has been received and considered.

The following are general examples of priority concerns:

- Negative impacts of development on [name water resource(s)].
- Cumulative impacts of [issue] in the [subwatershed].
- Disconnect between land use regulations and [water resource management, or the comprehensive plan, or other specific plans].
- Impaired or degraded waters in the [subwatershed].
- Excess runoff volume from public and private drainage systems.
- Groundwater contamination in the [demographic area] or [resource].
- Preserving the water quality of [resource].
- Failing septic systems within 1,000 feet of priority water bodies and courses.
- Flash flooding of the [resource] due to reduced water storage capacity in the [subwatershed].
- Conflicts between water management programs or authorities.

7. Selecting Priority Concerns

Summary of Goals, Actions, and Projected Costs

Goals and Actions were selected to address priority concerns on a watershed basis, with a focus on principles of sound hydrological management. A watershed based approach will help in prioritizing future funding opportunities for Cottonwood County.

Priority Concern 1. Improve Surface Water Quality.

This concern will be addressed to prevent further degradation of stream and lake water quality. Objectives include protecting soil from erosion and agricultural runoff, impacts of drainage management, wetland restoration and management, and addressing TMDL impaired waters with the promotion of conservation practices in the watersheds.

Implementation actions include promotion and education, providing technical assistance for conservation programs and best management practices; seeking financial assistance for conservation practices; develop a Drainage Management Plan for Cottonwood County and develop a GIS layer for all public drainage systems in the County; promote conservation drainage; and work with local, state and federal partners on measures to improve water quality and provide technical and administrative support for watershed work in TMDL impaired watersheds.

Projected total costs over the five years from the *'Implementation to Address Priority Concerns' – 'Goals and Objectives – Action'* section of the management plan amendment include approximately \$1,694,850 for projects and financial assistance, \$1,814,950 for technical and administrative assistance and \$40,500 for outreach and education. All dollar figures are estimates and recognize approximate costs (technical assistance calculated adding specific action items and twenty-five percent of the project costs). There will also be in-kind associated with each action item written.

Priority Concern 2. Protect Groundwater.

This concern will be addressed to assure long-term quality and quantity of groundwater supplies, with a priority for Drinking Water Supply Management Areas (DWSMA) and surficial aquifers. Objectives include supporting wellhead protection, preventing groundwater contamination, and protecting long-term supplies.

Implementation actions include providing technical assistance for conservation programs and best management practices; seeking financial assistance for landowners; outreach and education; maintenance of GIS layers; testing well water quality; providing assistance and funding to seal unused wells; and work with cities and water providers for to protect our long-term water supplies.

Projected total costs over the five years from the *'Implementation to Address Priority Concerns' – 'Goals and Objectives – Action'* section of the management plan amendment include approximately \$527,812 for projects and financial assistance, \$275,938 for technical and administrative assistance, and \$13,000 for outreach and education. All dollar figures are estimates and recognize approximate costs (technical assistance calculated adding specific action items and twenty-five percent of the project costs). There will also be in-kind associated with each action item written.

Priority Concern 3. Feedlots & SSTS (Sub-Surface Sewage Treatment Systems).

This concern will address the protection of public waters and assist residents in meeting feedlot and septic standards, focusing on immediate health and safety needs. Objectives include assisting feedlot owners to maintain compliance with state statutes and continuing to bring nonconforming septic systems into compliance with state standards.

Implementation actions include providing education and outreach, technical assistance with nutrient and manure plan development, maintenance of GIS layers, review ordinances, and providing financial, technical assistance to upgrade feedlots (with emphasis on the Level II Inventory results), and upgrading non-compliant septic systems.

Projected total costs over the five years from the *'Implementation to Address Priority Concerns'* – *'Goals and Objectives – Action'* section of the management plan amendment include approximately \$3,353,625 for projects and financial assistance, \$1,132,875 for technical and administrative assistance, and \$24,000 for outreach and education. All dollar figures are estimates and recognize approximate costs (technical assistance calculated adding specific action items and twenty-five percent of the project costs). There will also be in-kind associated with each action item written.

8. Description of Priority Concerns for Cottonwood County (Previous)

Description of Priority Concerns

The Priority Concerns listed below were selected by the Water Plan Task Force members by consensus during the 2006-2007 plan development and reviewed by the Water Task Force in 2011-2012. While the assessment of priority concerns utilized the best available data, this plan rests solidly on information and analysis contained in previous editions of the county's local water management plan.

Priority Concern 1. Improve Surface Water Quality.

Protecting soil from erosion is always a challenge. Improved land use and agricultural best management practices are necessary to address the quality of lakes, wetlands and rivers. MPCA listing of impaired waters requires local strategies to meet Total Maximum Daily Load (TMDL) standards.

Priority Concern 2. Protect Groundwater.

Portions of Cottonwood County have enjoyed adequate groundwater supplies, while other areas have experienced difficulty with sufficient supply. There is increasing concern with groundwater quality and long-term supply. Efforts to protect groundwater should be focused on Drinking Water Supply Management Areas (DWSMA) and surficial aquifer areas.

Priority Concern 3. Feedlots & SSTS (Sub-Surface Sewage Treatment Systems).

Nutrient management plans and controlling feedlot runoff are important tools in preventing water quality issues. There are also many dispersed farmsteads and rural residential properties with outdated septic systems; there is a great need and demand to continue upgrades.

9. County Priority Concerns from Surrounding Counties

County Priority Concerns Scoping Document

X = Priority concerns as referenced in each County's Priority Concerns Scoping Document.

O = Strong ongoing activities implemented in the County Water Plan

PRIORITY CONCERNS	Blue Earth	Cottonwood	Faribault	Freeborn	Jackson	Le Sueur	Martin	Waseca	Watsonwan
Agricultural Concerns			X			X			
Promote Low Impact Development in Impaired Waters							X		
Drainage Management									
Public Education			O				O	X	
Erosion Control			X		X				
Feedlots									
Flood Damage (Minimize)				X					
Groundwater									
SSTS – treatment systems									
Municipal Stormwater Treatment/Discharge				X		X			
Reduce Priority Pollutants								X	
Promote Use of BMPs							X		
Rural Stormwater Mgmt			X						
Comprehensive Sediment Control									X
Shoreland and Natural Corridors (Protect and Preserve)				X		X		X	
Surface Water Quality									
Urban Stormwater Mgmt			X						
Water Quality Concerns (TMDLS)									
Water Retention									X
Wetlands (Protection and Restoration)									
Water Quality in Area Lakes							X		
Wildlife and Natural Resource Concerns	X		X						
Buffers									

10. The Beef on Buffers

THE BEEF ON BUFFERS

In June 2015, the buffer initiative was signed into law with the goal of enhancing and protecting Minnesota's water resources.

Why did this come about?

Studies by the Minnesota pollution control agency found that few waters in southwest Minnesota meet fishable and swimmable standards.

Who is responsible for the work?

DNR is responsible for producing the maps associated with the waters that will require buffers. Those maps are anticipated to be ready by July 2016 for review. The Counties/SWCDs/Watershed Districts (dependent upon organizations present) will be responsible for providing technical assistance to landowners and enforcement of the buffer law.

What are the buffer width requirements?

- Public Water = 50 ft
- Public water wetlands with Shoreland classification = 50 ft
- Public Drainage systems with shoreland classification = 50 ft
- Public drainage systems without shoreland classification = 16.5 ft
- Public wetlands without shoreland classification = not included

What defines a public water or public drainage system?

Public waters will be those defined under statute 103G.005, subdivision 15 that are subject to the new law. Public drainage systems established under chapter 103E will require 16.5 feet under the new law.

When do buffers need to be installed by?

- Public Waters = November 1, 2017
- Public Drainage Ditches = November 1, 2018



New legislation regarding the buffer law in the current legislative session:

There are two bills (one House, one Senate) to provide clarifications, included are some of the main points:

- Addition that alternative practices must include retention ponds and alternative measure that prevent overland flow to the water resource.
- A new exemption from subdivision 3 of the buffer language that a public ditch that is part of a drainage authority plan to install vegetated ditch buffers under chapter 103E by December 31, 2025
- Stricken is the withholding of funding for SWCD aid, NRBG funds, and other project and funds. The language is proposed to withhold funds to implement this section.
- Stricken is the wording to require all waters within the benefitted area of a public ditch will require a buffer and will only be subject to public drainage systems only.
- Addition of a definition of "with jurisdiction" means the county or watershed district has adopted a rule or ordinance providing procedures for issuance of administrative penalty orders, etc.

11. Task Force Calendar of Planned Meetings

Cottonwood County Comprehensive Local Water Plan Update Meetings

2016

March 1	Resolution Approved
March 4	Notice of Plan Update
March 31	Task Force Meeting
Location - Cottonwood Co. Law Enforcement Center	
Time - 2:00 - 4:00 p.m.	
April 6	OPEN HOUSE
Location - Cottonwood SWCD Office	
Time - 2:00 - 6:00 p.m.	
(Deadline for Comments April 22, 2016)	
April 26	Task Force Meeting
Location - Cottonwood Co. Law Enforcement Center	
Time - 1:00 - 3:00 p.m.	
(Approval for submission of Scoping Document)	
April 27	Request for Board Presentation
May 3	Cottonwood Co. Commissioner Mtg.
Presentation of Scoping Document and Approval	
60 Day - Public Comment - Scoping Document	

March '16						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

June '16						
Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

September '16						
Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December '16						
Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February '16						
Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29					

May '16						
Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

August '16						
Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

November '16						
Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

January '16						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

April '16						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

July '16						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

October '16						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

12. Ad - Open House - Cottonwood County Water Plan Task Force

COTTONWOOD COUNTY WATER PLAN TASK FORCE
OPEN HOUSE
Wednesday, April 6
2:00—6:00 p.m.

Cottonwood SWCD Office, 339 9th Street, Windom

Cottonwood County is updating the Comprehensive Local Water Management Plan and the Water Plan Task Force would like to invite local and state agencies, non-governmental organizations and any concerned Cottonwood County residents to participate.

Task Force Meeting Calendar
March 31—Process Description and Objectives
(Meeting will be held at the Cottonwood Co. Law Enforcement Center at 2:00 p.m.)
April 26—Review Comments and Set Priority Concerns
(Meeting will be held at the Cottonwood Co. Law Enforcement Center at 1:00 p.m.)

If you are unable to join us at the Open House, we encourage you to send in your comments to the Cottonwood SWCD Office by Friday, April 22 or join us for a Task Force Meeting.

For more information, please call 507-831-1153 Ext. 3.

CCSWCD Water Task Force

3/9/2016 4:59:

13. Todd Luke- Written Comments

Kay Clark

From: Becky Alexander <becky.alexander@windomnet.com>
Sent: Tuesday, April 19, 2016 3:50 PM
To: Kay Clark
Subject: FW: Cottonwood County Water Plan
Attachments: Christiania WPA Plans 4-22-14 (1).pdf

From: Luke, Todd [mailto:todd_luke@fws.gov]
Sent: Tuesday, April 19, 2016 3:43 PM
To: Becky Alexander (becky.alexander@windomnet.com)
Subject: Cottonwood County Water Plan

Hi Becky

I don't know the objectives of your water plan, but I would assume water retention, for a variety of benefits, would be one of them. For your interest, I have attached a recently completed larger wetland restoration/water storage project we completed just southeast of Windom in Jackson County on JD 33. It was a complicated project involving county and private tile abandonment and re-routing, but a good example of how ag and conservation interests came together for a win-win. The restored 70 acre basin that resulted is now improving water quality for Fish Lake, providing critical wildlife habitat, and enhancing drainage for both upstream and downstream neighbors. This project was actually a little on the smaller side - I am working on larger basin restorations/enhancements in my other counties - but I know there are many similar opportunities in Cottonwood County. We have the way and the means, (partners and funding). The key in all of this is really just a matter of locating/convincing landowners to participate.

If you think this would be of value to your planning, let me know and I would be happy to contribute to you planning meetings.....

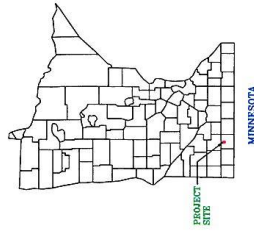
Todd Luke
District Manager
USFWS - Windom WMD
49633 Co Rd 17
Windom, MN 56101
507/831-2220 office
507/822-0325 cell



DUCKS UNLIMITED

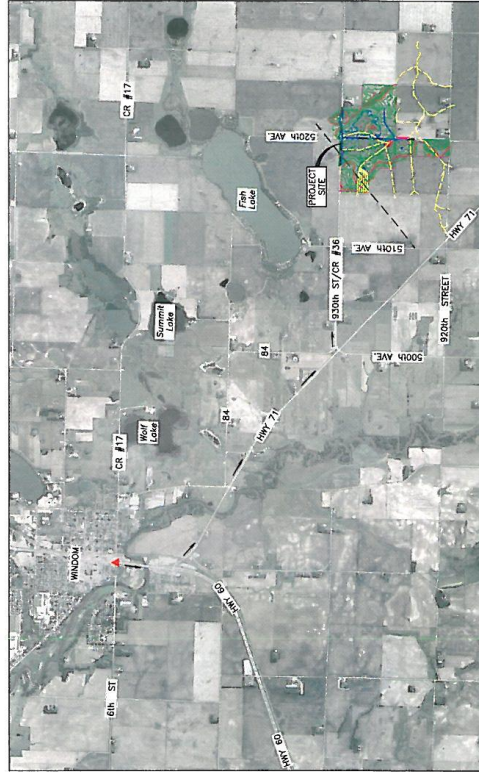
DUCKS UNLIMITED
PROJECT

CHRISTIANA WPA
SECTIONS 9 & 10, T104N, R35W
JACKSON COUNTY, MN
IN COOPERATION WITH
U.S. FISH & WILDLIFE SERVICE



PLAN INDEX

- 1 PROJECT LOCATION MAP
- 2 QUANTITIES, SPECIFICATIONS & NOTES
- 3 PROJECT TOPOGRAPHY
- 4 NORTH EMBANKMENT PLAN & PROFILE
- 5 SOUTH EMBANKMENT PLAN & PROFILE
- 6 ROAD RAISE PLAN & PROFILE
- 7 SOUTH EMBANKMENT PLAN & PROFILE
- 8 TILE OUTLET PLAN & PROFILE
- 9 TILE OUTLET STRUCTURE PLAN & DETAILS
- 10 TILE BREAK PLAN & NOTES, BORROW AREAS
- 11 THOMPSON EMBANKMENT RESTORATION DETAILS
- 12 EROSION CONTROL DETAILS
- 13 STORMWATER PLAN



AGENCY CONTACT
TODD LUISE, DISTRICT MANAGER
U.S. FISH & WILDLIFE SERVICE
507-831-2220 (OFFICE)
507-831-2220 (CELL)
BRIAN CONRADT
507-356-3551 P.E.
507-356-3551

LOCATION MAP

FROM MAP DATA: IN WISCONSIN, THE INTERSECTION OF HWY 71 AND
HWY 80 IS LOCATED AT THE INTERSECTION OF HWY 71 AND HWY 80
ON THE ROAD TO THE PROJECT SITE.

REVISION	DATE	BY	REVISION

DATE: 4-22-2014
DRAWN BY: J. LUISE
CHECKED BY: J. LUISE
DATE: 4-22-2014
PROJECT NO.: 10-13

DUCKS UNLIMITED
CHRISTIANA WPA
LOCATION & VICINITY MAPS
JACKSON CO., MN
JACKSON CO., MN
JACKSON CO., MN
JACKSON CO., MN

IF THESE PLANS ARE NOT SIGNED AND/OR REPRODUCED AT THE ORIGINAL
SIZE OF 24" X 36" ANY SCALE REDUCED HEREIN SHOULD BE DISREGARDED
AND THE PLANS SHOULD BE CONSIDERED NOT TO SCALE.

14. Ed Lenz- Written Comments



4/21/2016

Kay Gross, District Administrator
Cottonwood County
339 9th Street
Windom, MN 56101

RE: Response to invitation to submit priority concerns for the Cottonwood County Priority Concerns Scoping Document for the Local Water Management Plan Update

Dear Cottonwood County Commissioners:

Thank you for providing the opportunity to provide priority issues and plan expectations for the update and revision of the Cottonwood Comprehensive Local Water Management Plan, as authorized under the Comprehensive Local Water Management Act, Minnesota Statutes, §103B.301.

The Board of Water and Soil Resources (BWSR) has the following specific priority issues:

- The county is strongly encouraged to include the drainage authority as a stakeholder in the plan update process as well as include projects and activities consistent with multipurpose drainage criteria outlined in Minnesota Statutes §103E.015, Subd. 1.
- The state's Nonpoint Priority Funding Plan (NPFP) outlines a criteria-based process to prioritize Clean Water Fund investments—if the county is intending to pursue Clean Water Fund as a future source of funding, partners are strongly encouraged to consider the high-level state priorities, keys to implementation, and criteria for evaluating proposed activities in the NPFP.
- The Watershed Restoration and Protection Strategies (WRAPS) development for the Watonwan, Cottonwood, Middle Minnesota, and West fork Des Moines Watersheds are ongoing, and at their current stage, may have identified specific stressors and priority locations within all four watersheds. Considering that these WRAPS are not yet completed, and final reports are unavailable, utilizing the current monitoring efforts and collected data could provide valuable information as to the stressors and priority locations for implementation activities.

Bemidji 403 Fourth Street NW Suite 200 Bemidji, MN 56601 (218) 755-2600	Brainerd 1601 Minnesota Drive Brainerd, MN 56401 (218) 828-2383	Detroit Lakes 26624 N. Tower Road Detroit Lakes, MN 56501 (218) 846-8400	Duluth 394 S. Lake Avenue Suite 403 Duluth, MN 55802 (218) 723-4752	Mankato 12 Civic Center Plaza Suite 3000B Mankato, MN 56001 (507) 344-2821	Marshall 1400 East Lyon Street Marshall, MN 56258 (507) 537-6060	New Ulm 261 Highway 15 South New Ulm, MN 56073 (507) 359-6074	Rochester 3555 9 th Street NW Suite 350 Rochester, MN 55901 (507) 206-2889
Central Office / Metro Office 520 Lafayette Road North Saint Paul, MN 55155 Phone: (651) 296-3767 Fax: (651) 297-5615 www.bwsr.state.mn.us TTY: (800) 627-3529 An equal opportunity employer							

- BWSR recommends you utilize the TMDL Report for the West Fork Des Moines River (EPA, December 2008) when considering implementation efforts to address bacteria, turbidity, and excess nutrients within the watershed. Additionally, BWSR recommends that you review and consider the West Fork Des Moines River and Heron Lake TMDL Implementation Plan (September 2009) in which Cottonwood County was part of the technical committee. The TMDL Implementation Plan identifies both bacteria and turbidity reductions within the watershed.
- Data collection and monitoring activities necessary to support implementation schedules and to reasonably assess and evaluate plan progress are suggested and should be coordinated with other organized local governmental and state efforts. It is important that data collection efforts are developed and be continued. The associated data already collected should be taken into consideration when developing the watershed-based Comprehensive Local Water Management Plan.
- Emerging issues: There are a number of emerging issues that could have an effect on water quality and quantity in Cottonwood County. These could include, but are not limited to, riparian buffer protection, drainage technology, urban stormwater management, conversion of grassland, changes in crop rotations, and cover crops. The Plan should assess strategies related to their resiliency based on expected changes in climate, land use, etc. This includes an understanding and use of current precipitation frequency and distribution information in the National Oceanic and Atmospheric Administration (NOAA) Atlas 14.
- Groundwater issues and Drinking Water Supply Management areas should be considered with development of priority concerns. Protection efforts should be incorporated into the development of the plan as well as support of planning efforts within Wellhead Protection Areas. Initiating the development of a County Geological Atlas within Cottonwood County should be an important implementation effort. Groundwater Atlases are very beneficial for the prioritization of BMP's that provide both surface water and groundwater improvements and protection efforts.

When developing the County's Priority Concerns Scoping Document that will be distributed for State Agency review and comments, don't forget to add a brief section that talks about implementing the County's ongoing programs and ordinances. Although these ongoing programs and ordinances may not be among the selected priority concerns for the next five or ten years, implementing them will work hand-in-hand with the selected priority concerns to protect and improve the natural resources of the county.

Local prioritization, detailed targeting, and measureable outcomes are vital in the creation of priority concerns, goals, and actions. A more targeted approach down to the sub watershed or specific site level should include answers to the following questions: What is the concern, why is it a concern, what are the implications if the concern is not addressed, who is most effected by the concern and where (watershed or other location) is the concern located? Answering these five questions for the goals and objectives will be key to a quality, useable plan.

Minnesota Board of Water & Soil Resources • www.bwsr.state.mn.us

We look forward to working with you through the rest of the plan development process. If you have any questions, please feel free to contact Ed Lenz, 507-537-6374, ed.lenz@state.mn.us.

Sincerely,

Ed Lenz
Board Conservationist
Minnesota Board of Water and Soil Resources

cc: Robert L. Sip, MDA (via email)
Amanda Strommer, MDH (via email)
Catherine Fouchi, DNR (via email)
Juline Holleran, MPCA (via email)
Jeff Nielsen, BWSR Regional Manager (via email)

Minnesota Board of Water & Soil Resources • www.bwsr.state.mn.us

15. Rob Sip- Written Comments

Kay Clark

From: Sip, Rob (MDA) <rob.sip@state.mn.us>
Sent: Friday, April 22, 2016 11:36 AM
To: kay.clark@windomnet.com
Cc: Nielsen, Jeff (BWSR)
Subject: Cottonwood County Comprehensive Local Water Management Plan Update
Attachments: Final Version Reducing Ditch System Maintenance Costs Factsheet in the RRB - March 25, 2015.pdf; NRCS_FarmLandClassification_2016_MN_2.pdf; 2015 Crow Wing Prioritization.pdf; MDA Drainage Recommendations for Local Water Mgmt Plans - June 2014.pdf

Kay,

Below is a website that MDA has developed to discuss and illustrate priority concerns. The MDA is in the process of updating this website and MDA realizes that recommendations are implemented based on staff, financial and technical resources. The MDA also realizes that this is a 5 year update. In addition to the website recommendations, the MDA is providing additional information below to highlight priorities.

MDA Water Planning Assistance Website:

<http://www.mda.state.mn.us/en/protecting/waterprotection/waterplanning.aspx>

1. Drainage Water Management (DWM) - The MDA recommends additional effort be focused on encouraging landowners and farmers to implement DWM practices and management plans. The Cottonwood County SWCD can play a important role in working with drainage authorities, landowners and agricultural groups to determine how best to promote and implement DWM practices. Attached are drainage related recommendations from the MDA, which are also being updating. A fact sheet from the Red River Watershed Management Board regarding ditch system maintenance is also attached. Please distribute this factsheet when appropriate as you work with area farmers and landowners and water management partners.

The MDA also recommends that Cottonwood County consider the development of a Multipurpose Drainage Management Plan in conjunction with its partners and below is a recent example that you are probably aware of. While this is just one recent example, it may serve as a model for Cottonwood County:

<http://www.co.martin.mn.us/images/Ditch%20Admin/Martin%20County%20Multipurpose%20Drainage%20Management%20Plan.pdf>

2. Water Storage - The MDA recommends that Cottonwood County along with its water management partners consider the development of a water storage plan for both public drainage systems and for private on-farm water storage. This plan may build off of existing water or drainage management plans and may include but not be limited to the following:

- Communication of the development of a water storage plan with private landowners in Cottonwood County.
- Obtaining flow data and setting flow goals agreed upon by landowners within each public ditch systems or sub-watersheds.

- Prioritizing public ditch systems or sub-watersheds based on flow goals with input from landowners.
- Assessment of where short-term and long-term water storage projects can be located. This may include several types of water storage, including smaller scale (wetland restorations) or larger scale projects such as constructed impoundments. However, larger scale projects are costly and require significant financial resources to engineer, construct, operate and maintain.
- Development of an implementation plan or schedule that would include discussion of funding considerations, again with landowner input.
- Operation and maintenance plans for each project.

The MDA is also aware of the sensitivity regarding past efforts to manage water on a regional basis and further recognizes that local policy-makers have difficult decisions to make regarding how to address these important issues.

3. Wind and Water Erosion - Attached is a map of prime soils that was recently updated by the USDA NRCS and please share this with your partners. The SWCD may have opportunities in the future to create additional awareness about prime soils by sharing and distributing this map. The MDA recommends that the Cottonwood County water plan focus and renew efforts to reduce wind and water erosion and that efforts continue to implement more conservation practices such as WASCOBs, grassed waterways, etc., in priority areas.

Field windbreaks, farmstead windbreaks and small areas of trees or other vegetation have been removed from the landscape at unprecedented levels in recent years. However, the MDA also realizes that many of the field windbreaks that have been removed were beyond their lifespan. Windbreaks and vegetative plantings that also incorporate pollinator habitat can serve dual purposes. It is also critical that cover crops, residue management and other soil health initiatives be implemented at an increased levels. The MDA recommends that tools such as PTMAPP (website below) be used as your county continues its important water quality efforts: <http://www.rrbdin.org/prioritize-target-measure-application-ptmapp>

4. Lake Management - The MDA recommends that a process be considered for development to prioritize lake management and protection efforts in Cottonwood County. As an example, Crow Wing County developed a process (attached) to prioritize lake protection efforts. Recently two additional counties have adopted components of this process or have created similar lake protection efforts.

5. General Information about the MDA - you may wish to incorporate the following language if there is a need to illustrate state agency duties and responsibilities:

The MDA is statutorily responsible for the management of pesticides and fertilizer other than manure to protect water resources. The MDA implements a wide range of protection and regulatory activities to ensure that pesticides and fertilizer are stored, handled, applied and disposed of in a manner that will protect human health, water resources and the environment. The MDA works with the University of Minnesota to develop pesticide and fertilizer Best Management Practices (BMPs) to protect water resources, and with farmers, crop advisers, farm organizations, other agencies and many other groups to educate, promote, demonstrate and evaluate BMPs, to test and license applicators, and to enforce rules and statutes. The MDA has broad regulatory authority for pesticides and has authority to regulate the use of fertilizer to protect groundwater. The MDA is the lead agency for all aspects of pesticide and fertilizer environmental and regulatory functions as directed in the Groundwater Protection Act (Minnesota Statute 103H). These include but are not limited to the following:

- Serve as lead agency for groundwater contamination from pesticide and fertilizer nonpoint source pollution.
- Conduct monitoring and assessment of agricultural chemicals (pesticides and nitrates) in ground and surface waters.
- Oversee agricultural chemical remediation sites and incident response.
- Regulate use, storage, handling and disposal of pesticides and fertilizer.

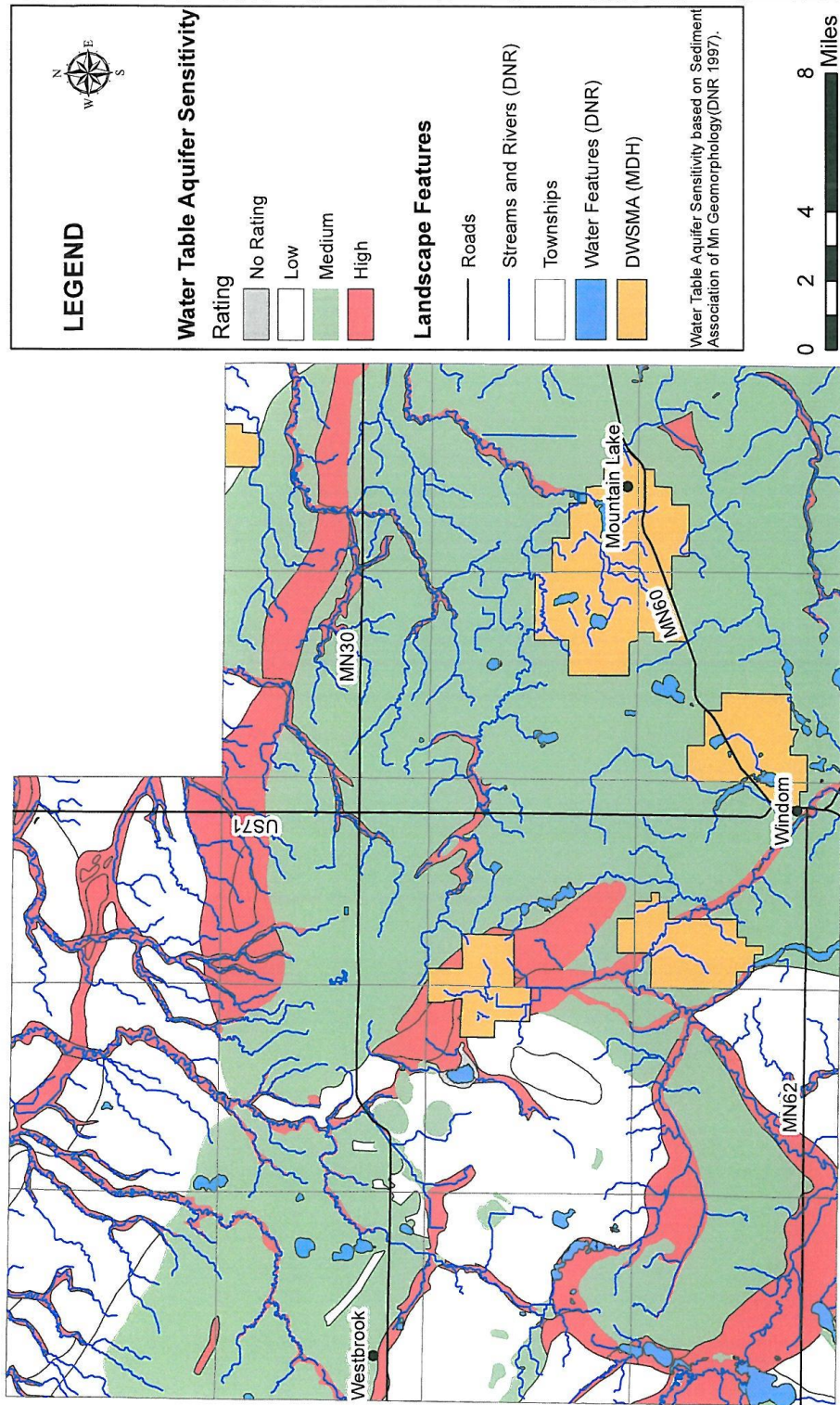
Thank you for the opportunity to comment. Please do not hesitate to contact me if you have any questions.

Robert L. Sip
Environmental Policy Specialist
Pesticide and Fertilizer Management Division
Minnesota Department of Agriculture
3725 12Th Street North
St. Cloud, MN 56303

320-223-6531 (Office)
651-319-1832 (Cell)
651-201-6120 (Fax)

rob.sip@state.mn.us
www.mda.state.mn.us

COTTONWOOD COUNTY WATER TABLE SENSITIVITY



Prepared by the Minnesota Department of Agriculture April 2012



DRAINAGE RECOMMENDATIONS FOR LOCAL WATER MANAGEMENT PLANS

The Minnesota Department of Agriculture (MDA) recommends the following drainage related items be considered or included as goals or objectives in local water management plans when applicable. The MDA realizes that not all of these recommendations may be included or adopted due to financial resources, staff capacity, and other factors at the local level.

T H I N K
M U L T I
P U R P O S E
D R A I N A G E

- **Comprehensive Drainage Management Plans** - The MDA recommends that your Local Governmental Unit (LGU) consider developing a comprehensive plan to guide efforts related to drainage system management. A comprehensive plan may include prioritization of Redetermination of Benefits and other ditch system maintenance, repair or improvement projects. An example of a recent plan is from Martin County, which released their plan in February 2014 and can be found at this weblink: <http://www.co.martin.mn.us/index.php/government/ditch-administration>
- **Drainage Advisory Committee** - The management of public drainage systems is complex and involves consideration of how public open ditches, tiles and culverts interact or are affected by private systems – both subsurface tile and open ditches with private culverts. Therefore, the MDA recommends that your LGU create a permanent Drainage Advisory Committee to inform important drainage issues before critical decisions are made by local policy-makers.
- **System-wide Culvert Inventory** - This will provide much needed information about the location, capacity and condition of culverts that are part of or adjacent to the public drainage system. Once conducted, your LGU may want to consider how culvert sizing can be utilized to address localized flooding conditions. The MDA refers you to one technical paper that was developed by the Technical and Scientific Advisory Committee of the Red River Watershed Management Board titled, "Culvert Sizing for Flood Damage Reduction" and the report can be found at the following website: <http://www.rwmb.org/files/FDRW/TP15.pdf>
- **Open Tile Inlet Inventory** - The MDA recommends developing an inventory (if one does not exist) of open tile inlets that are immediately adjacent to public ditches. An inventory will provide information about where inlets could be converted into blind inlets, rock inlets or some other type of inlet to reduce sediments and to slow the flow of water. The inventory could also provide information about where side inlet controls would be beneficial and where efforts could be targeted and prioritized. Your SWCD may already have knowledge of areas that are in need of open tile inlet conversion or side inlet controls.
- **Drainage Co-efficients (DC)** - The MDA recommends that DCs be based on engineering data and other relevant information to guide local DC policies and decisions. The MDA does not recommend specific DCs as conditions vary from one geographic region to another and there is no "one size fits all" approach to DCs. Crop tolerances for standing water should be considered and this is one area where a Drainage Advisory Committee could provide additional guidance and expertise.
- **Drainage Water Management (DWM) Plans** - The MDA recommends that LGUs encourage the development and implementation of DWM plans when new pattern tile systems are installed or when existing systems are repaired or upgraded. The MDA realizes that DWM plans may not fit the needs of every farmer or landowner, but efforts should be made to promote the management of drainage water.
- **Outreach Efforts** - Consider demonstration sites for bioreactors, saturated buffers or other drainage Best Management Practices (BMP) to illustrate operation, maintenance and performance issues to interested landowners and farmers. The MDA can assist with local efforts to demonstrate BMPs.
- **Water Storage** - The MDA recommends that water storage be further considered in local plans to include both short-term and long-term storage. The MDA realizes that storage projects are expensive and require time to process permits before construction can start. Storage may include but not be limited to wetland restoration or creation; large-scale or small-scale constructed impoundments; or water retention and detention.

In accordance with the Americans with Disabilities Act, an alternative form of communication is available upon request.
TDD: 1-800-627-3529. MDA is an Equal Opportunity Employer.

Minnesota Department of Agriculture, 625 Robert Street North, St. Paul, MN 55155-2538
www.mda.state.mn.us 800-967-AGRI (2474)

Contact Information:

Robert Sip
Environmental Policy Specialist
Pesticide and Fertilizer Mgmt. Div.
Minnesota Dept. of Agriculture
625 Robert Street North
St. Paul, MN 55155-2538

651-319-1832 (Cell Number)
rob.sip@state.mn.us
www.mda.state.mn.us

16. Amanda Strommer- Written Comments

Priority Concerns Input Water Management Plan for Cottonwood County

Submission Deadline: April 22, 2016

SUBMITTED BY:

Agency / Organization: Minnesota Department of Health, Source Water Protection Unit

Name of Person Completing Form: Amanda Strommer, Principal Planner

PRIORITY CONCERNS:

For each priority concern, provide a brief description and answer the questions listed after each priority concern.

PRIORITY CONCERN 1: *Drinking Water Quality (Groundwater)*

Why is it important the plan focus on this issue? (Include or cite relevant data)

The current plan does a nice job highlighting the issues with groundwater. MDH appreciates continued coordination with public water suppliers regarding implementation of wellhead protection plans and drinking water protection.

What actions are needed?

- Consider wellhead protection areas in land use decisions.
- Support locating and properly sealing abandoned wells.
- Locally discuss and evaluate how to use WRAPS and 1W1P watershed planning in the future to target and prioritize drinking water protection activities.
- Support ongoing data collection efforts to enhance future wellhead protection activities.

What resources may be available to accomplish the actions? Do you or your organization or agency have a role in addressing this priority concern? (Please include names, funding sources, partnerships, volunteers, etc.)

Grant funds for public water supplies.

<http://www.health.state.mn.us/divs/eh/water/swp/grants/index.html>

Up to date wellhead protection information can be found at:

<http://www.health.state.mn.us/divs/eh/water/swp/swa/swainfo/default.cfm>

Maps and geospatial data can be found at:

<http://www.health.state.mn.us/divs/eh/water/swp/maps/index.htm>

What areas of the County are the highest priorities?

Wellhead protection plans have been completed for the following communities:

Vulnerable/susceptible to contamination:

Comfrey
Jeffers (Part 1 almost complete)
Mountain Lake
Red Rock Rural Water
Windom

Wellhead Protection Plans not yet started:

Westbrook

PRIORITY CONCERN 2: Groundwater Quantity

Why is it important the plan focus on this issue? (Include or cite relevant data)

Adequate supply of drinking water will continue to be an important due to growth and development.

What actions are needed?

- Encourage water conservation efforts and education.
- Encourage land uses and the installation of best management practices which recharge groundwater.
- Increase awareness among public officials, land owners, and the general public regarding the interaction between groundwater and surface water sources in order to make informed water management decisions.

What resources may be available to accomplish the actions? Do you or your organization or agency have a role in addressing this priority concern? (Please include names, funding sources, partnerships, volunteers, etc.)

Many water suppliers include water conservation in wellhead protection plan measures. Grant funds for public water supplies.

<http://www.health.state.mn.us/divs/eh/water/swp/grants/index.html>

What areas of the County are the highest priorities?

Entire County

17. Wayne Cords Letter-MPCA



Minnesota Pollution Control Agency

Mankato Office | 12 Civic Center Plaza | Suite 2165 | Mankato, MN 56001-8704 | 507-389-5977
800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

March 30, 2016

Ms. Kay Gross
Cottonwood County District Administrator
339 Ninth Street
Windom, MN 56101

RE: Cottonwood County Local Water Management Plan, Five-Year Amendment

Dear Ms. Gross:

This letter responds to a request that the Minnesota Pollution Control Agency (MPCA) provide water management priorities of concern for consideration in amending the Cottonwood County (County) Local Water Management Plan (LWMP).

1. IMPAIRED WATERS/TOTAL MAXIMUM DAILY LOADS (TMDLs)

The federal Clean Water Act requires states to adopt water quality standards to protect water resources. Water quality standards are fundamental tools that help protect Minnesota's water resources from pollution. The states are also required to monitor and assess their waters to determine if they meet water quality standards and thereby support the beneficial uses they are intended to provide. These standards define how much of a pollutant can be in a surface and/or groundwater while still allowing it to meet its designated uses, such as for drinking water, fishing, swimming, irrigation, or industrial purposes. Many of Minnesota's waters do not meet their designated uses because of pollution problems from a combination of point and nonpoint sources. Waters that do not meet their designated uses because of water quality standard violations are considered impaired. States are then required to develop a list (Impaired Waters 303(d) List) of impaired waters that require TMDL studies, and to submit an updated list to the U.S. Environmental Protection Agency for approval. Grant funding applications for TMDL impaired water implementation projects may request citations from local water plans identifying water bodies as county priorities. This documented commitment by a county may improve an applications ranking and ultimately the county's ability to secure implementation funding.

As a priority issue to consider in the amended LWMP, the County should focus on impaired waterbodies that are on the proposed Impaired Waters 303(d) List. The waters on the proposed 2014 Impaired Waters 303(d) List for Cottonwood County are provided in the tables below.

Streams

Reach Name	Reach Description	River AUID	Basin	Year Listed	Affected Designated Use	Pollutant or Stressor	TMDL Status
Little Cottonwood River	Headwaters to Minnesota R	07020007-515	MnR	2006	Aquatic Life	Turbidity	Required
				2006	Aquatic Recreation	Fecal Coliform	Required
Cottonwood River	Dry Cr to Mound Cr	07020008-506	MnR	1998	Aquatic Consumption	Mercury in fish tissue	Approved

Reach Name	Reach Description	River AUID	Basin	Year Listed	Affected Designated Use	Pollutant or Stressor	TMDL Status
Dutch Charlie Creek	Headwaters to Highwater Cr	07020008-518	MnR	2006	Aquatic Life	Fishes Bioassessments	Required
				2006	Aquatic Life	Turbidity	Required
Pell Creek	Headwaters to T109 R38W S29, east line	07020008-535	MnR	2010	Aquatic Life	Turbidity	Required
Watowan River, North Fork	Headwaters to Watowan R	07020010-513	MnR	2006	Aquatic Life	Turbidity	Required
Watowan River	Headwaters to N Fk Watowan R	07020010-514	MnR	2004	Aquatic Life	Fishes Bioassessments	Required
				2006	Aquatic Life	Turbidity	Required
				2006	Aquatic Recreation	Fecal Coliform	Approved
Judicial Ditch 1	Headwaters to Irish Lk	07020010-548	MnR	2006	Aquatic Life	Fishes Bioassessments	Required
Des Moines River	Windom Dam to Jackson Dam	07100001-501	DesM	1994	Aquatic Life	Ammonia (Un-ionized)	Required
				1994	Aquatic Life	Oxygen, Dissolved	Required
				1998	Aquatic Life	Turbidity	Approved
				2004	Aquatic Recreation	Fecal Coliform	Approved
Des Moines River	Heron Lk outlet to Windom Dam	07100001-524	DesM	2006	Aquatic Life	Turbidity	Approved
Heron Lake Outlet	Heron Lk (32-0057-01) to Des Moines R	07100001-527	DesM	2006	Aquatic Life	pH	Approved
				2006	Aquatic Life	Turbidity	Approved
Des Moines River	Lime Cr to Heron Lk outlet	07100001-533	DesM	2004	Aquatic Life	Turbidity	Approved
				2004	Aquatic Recreation	Fecal Coliform	Approved
Unnamed creek	String Lk to Des Moines R	07100001-551	DesM	2008	Aquatic Life	Turbidity	Required

Lakes

Name	Lake AUID	Basin	Year Listed	Affected Designated Use	Pollutant or Stressor	TMDL Status
Mountain	17-0003-00	MnR	1998	Aquatic Consumption	Mercury in fish tissue	Approved
Bingham	17-0007-00	MnR	2010	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	Required
Eagle	17-0020-00	MnR	2010	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	Required
Bean	17-0054-00	MnR	2010	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	Required
Double (North Portion)	17-0056-01	MnR	2010	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	Required
Talcot	17-0060-00	DesM	2010	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	Required
Fish (Northwest Bay)	32-0018-01	MnR	2002	Aquatic Consumption	Mercury in fish tissue	Approved
Fish (Bulhead Bay)	32-0018-02	MnR	2002	Aquatic Consumption	Mercury in fish tissue	Approved
Fish (Main Lake)	32-0018-03	MnR	2002	Aquatic Consumption	Mercury in fish tissue	Approved

It is suggested that the following actions be considered in the amended LWMP:

- Focus restoration implementation actions on impaired waters listed for pollutants/stressors (other than mercury and PCBs);
- Identify the pollutant(s) source(s) causing the impairment; and
- Describe implementation actions to reduce the pollutant(s) causing the impairments to address impaired waters from approved implementation plans, TMDLs, and selected strategies.

The following resources are available to accomplish the previous suggested actions:

- **MPCA Environmental Data Access System**

The water quality section of MPCA's Environmental Data Access (EDA) system allows visitors to find and download data from surface water monitoring sites located throughout the state. Where available, conditions of lakes, rivers, or streams that have been assessed can be viewed. We encourage the County to visit this site for water quality monitoring data that may be useful with LWMP planning efforts:

http://cf.pca.state.mn.us/water/watershedweb/wdip/search_more.cfm

- **Previous-approved Studies, Implementation Plans, and Strategies**

There are several approved TMDLs/ TMDL Implementation Plans, Clean Water Partnership Projects, and Strategies that have been developed that apply to Cottonwood County and are recommended to be used as guidance for the Priority Concerns, Objectives, and Actions in the amended LWMP.

- **West Fork Des Moines River Watershed TMDL**

<https://www.pca.state.mn.us/water/tmdl/west-fork-des-moines-river-watershed-multiple-impairments-tmdl-project>

- **Mountain Lake CWP Diagnostic Study and Implementation Plan**

Currently no link to this report and implementation plan; however, the MPCA and Cottonwood County have hard copies on file.

- **Minnesota River Low Dissolved-Oxygen TMDL**

<https://www.pca.state.mn.us/water/tmdl/lower-minnesota-river-low-dissolved-oxygen-tmdl-project>

- **Cottonwood River Fecal Coliform TMDL**

<http://www.pca.state.mn.us/index.php/view-document.html?gid=20167>

Ms. Kay Gross
Page 4
March 30, 2016

- **Cottonwood River Clean Water Partnership**

http://www.rcrca.com/images/GrantReports/CR_finalreport_Implementation.pdf

- **Greater Blue Earth River Fecal Coliform TMDL**

<https://www.pca.state.mn.us/water/tmdl/blue-earth-river-fecal-coliform-tmdl-project>

- **Sediment Reduction Strategy**

<http://www.pca.state.mn.us/index.php/view-document.html?gid=20703>

- **Nutrient Reduction Strategy**

<http://www.pca.state.mn.us/index.php/view-document.html?gid=20213>

High-priority areas would include impaired water bodies on the Clean Water Act Impaired Waters 303(d) List, though any area with high resource value waters should be considered.

2. WATERSHED APPROACH

Since 2007, the MPCA has been assessing waters by the process known as the Watershed Approach (<https://www.pca.state.mn.us/water/watershed-approach-restoring-and-protecting-water-quality>) as recommended by the Clean Water Council and directed by the Minnesota Legislature (<http://www.pca.state.mn.us/index.php/view-document.html?gid=6125>). The Watershed Approach is a 10-year rotation for addressing waters of the state on the level of Minnesota's major watersheds.

The Watershed Approach process begins with the Intensive Watershed Monitoring and Assessment phase of the project area that is at the eight-digit hydrologic scale. The Watershed Approach focuses on the watershed's condition as the starting point for water quality assessment, planning, implementation, and measurement of results. This approach may be modified to meet local conditions, based on factors such as watershed size, landscape diversity, and geographic complexity. This approach will ultimately lead to a more comprehensive list of impaired and non-impaired waters. This list will be used to develop TMDLs and Watershed Restoration and Protection Strategies (WRAPS) that will provide restoration strategies for impaired waters as well as protection strategies for non-impaired waters. The development of strategies will rely greatly on county participation, and counties will likely be asked to identify critical areas to target restoration and protection activities. Targeted critical areas will be an important step toward receiving funding for implementation activities.

The MPCA and its partners have begun implementing this approach, also referred to as the WRAPS approach. As you are aware, the WRAPS that are currently underway for your county are the Middle Minnesota River (2013), Watonwan River Watershed (2013), and the Des Moines River Watershed (2014). The Cottonwood River and Blue Earth River Watersheds are scheduled to begin in 2017. The MPCA encourages the County to incorporate the Watershed Approach in the amended LWMP. Once the WRAPS are completed, they will most likely be incorporated into the next phase of water planning such as the One Watershed One Plan.

It is suggested that the following actions be considered in the amended LWMP:

- **Monitor and gather data and information.**

The MPCA employs an intensive watershed monitoring schedule that will provide comprehensive assessments of all of the major watersheds on a ten-year cycle. This schedule provides intensive monitoring of streams and lakes within each major watershed to determine overall health of the water resources, to identify impaired waters, and to identify those waters in need of additional protection to prevent future impairments. It is suggested that the amended LWMP address Surface Water Assessment Grants (SWAGs) and additional county monitoring that may be used in the WRAPS.

- **Assess the data.**

Based on results of intensive watershed monitoring in step one, the MPCA staff and its partners conduct a rigorous process to determine whether or not water resources meet water quality standards and designated uses. Waters that do not meet water quality standards are listed as impaired waters. It is suggested that the amended LWMP address data submittal and representation to participate in the assessment process for use in the WRAPS.

- **Establish implementation strategies to meet standards.**

Based on the watershed assessments, a TMDL study and WRAPS report with restoration and/or protection strategies are completed. Existing LWMPs and water body studies are incorporated into the planning process. It is suggested that the amended LWMP address participation in development of restoration and protection strategies.

- **Implement water quality activities.**

Included in this step are all traditional permitting activities, in addition to programs and actions directed at nonpoint sources. Partnerships with state agencies and various local units of government, including watershed districts, municipalities, and soil and water conservation districts, will be necessary to implement these water quality activities. It is suggested that the amended LWMP address implementation of restoration and protection strategies once developed through the WRAPS.

- **Maintain current relationships.**

The County should maintain the current relationships with local watershed organizations and partners for continued participation in the watershed project efforts. Financial resources for coordination and communication between counties could include, but not be limited to, grants from the Clean Water Fund (CWF), Clean Water Partnership (CWP), Surface Water Assessment Grant (SWAG), Legislative Citizen Commission on Minnesota Resources (LCCMR), and federal Section 319. Technical assistance could be sought from an advisory group of local and state agency staff, local decision makers and landowners.

Priorities by year (start-completion) include: Middle Minnesota River Watershed (2013-2017), Watonwan River Watershed (2013-2017), Des Moines River Watershed (2014-2018), Cottonwood River Watershed (2017-2021), and Blue Earth River Watershed (2017-2021).

3. AGRICULTURAL DRAINAGE MANAGEMENT

The MPCA recognizes the importance of agricultural drainage for maintaining crop production in Cottonwood County. Agricultural drainage can have unintended consequences on the hydrology and water quality of lakes and rivers. Public and private drainage systems provide a direct conduit for transport of pollutants such as nutrients, pesticides, and herbicides to waterbodies, degrading their recreational, aesthetic, and functional value. In addition, drainage can short-circuit the landscape's water storage potential resulting in flashier river systems with higher peak flows. The higher flows result in bank and channel erosion, as the streams adjust to the increased energy and force. The down-cutting and widening of the channel limits stream access to the natural floodplain, reducing sediment deposition, and increasing sediment transport.

It is suggested that the following actions be considered in the amended LWMP:

The County should consider working towards the development of a comprehensive Drainage Management Plan (DMP) that addresses present and future drainage needs as well as methods to mitigate the unintended consequences as described above. To ensure the DMP is maintained and utilized, the MPCA recommends it be incorporated into the amended LWMP, and that it include explicit language that the County drainage authority should consult the plan with any petition to improve a public drainage system and elect options that mitigate increases in flow volume in areas where the increase has or may cause impairments to occur. A concerted effort by local decision makers, local and state agencies, and landowners will be necessary to ensure sufficient drainage for crop production while maintaining and improving water quality. As possible, the MPCA recommends that the County use its authority to implement best management practices (BMPs) such as alternative tile intakes, wetland restorations, vegetated buffer strips/zones, and other new technologies such as saturated buffers, two-stage ditches, and wood chip bioreactors into drainage projects.

Financial resources for development of a comprehensive DMP could include, but not be limited to, grants from the Clean Water Fund, LCCMR, and Section 319. Technical assistance for development of the plan could be sought from the state Drainage Management Team and/or an advisory group of local and state agency staff, and local decision makers and landowners.

High-priority areas would include impaired water bodies on the Clean Water Act Impaired Waters 303(d) List, though any area with high resource value waters should be considered.

We trust these recommendations will help with the County's LWM Plan planning efforts. If we may be of further assistance, please contact any of the following: Paul Davis in the Mankato Office at 507-344-5246, Katherine Pekarek-Scott in the Willmar office at 320-441-6973, or Mark Hanson in the Marshall office at 507-476-4259.

Ms. Kay Gross
Page 7
March 30, 2016

Thank you, and please let us know if we may be of further assistance.

Sincerely,

Wayne Cords

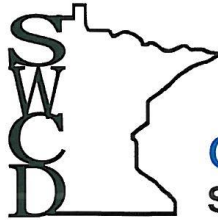
This document has been electronically signed.

Wayne Cords
Manager, Southeast Region
Watershed Division

WC:cz

cc: Ed Lenz, BWSR

18. Invitation to Comment



COTTONWOOD
SOIL AND WATER CONSERVATION DISTRICT

339 9th Street
Windom, MN 56101

Phone: 507-831-1153 Ext. #3
Fax: 507-831-2928

DATE: MARCH 11, 2016

TO: ED LENZ
BOARD OF WATER and SOIL RESOURCES

FROM: KAY GROSS
COTTONWOOD SOIL AND WATER CONSERVATION DISTRICT

SUBJECT: WATER PLAN TASK FORCE KICK-OFF MEETING

The Cottonwood Soil and Water Conservation District (SWCD) and Cottonwood County Land Management Office cordially invite you to participate as a member of the Cottonwood County Water Management Task Force Committee.

On March 1, 2016, the Cottonwood County Commissioners approved a resolution to 'Update the Cottonwood County Comprehensive Water Management Plan'. The County Board authorized the establishment of the Water Management Task Force. The Task Force will have the responsibility to help revise and update the plan. Cottonwood SWCD's responsibility is to coordinate, assemble, write and implement the updated local water management plan.

We would like to begin the revision process with a 'Kick-Off' Meeting on Thursday, March 31 starting at 2:00 p.m. at the Cottonwood County Law Enforcement Center (lower level meeting room) located at 902 5th Avenue, Windom, MN.

At this meeting you will receive information on the revision process and a timeline for completion.

Also included, for your information, is a calendar showing the dates and meetings relating to Phase 1 – Creating a Scoping Document and the date and time of our Open House on April 6.

If you are unable to attend this meeting, or if you would like to decline participation, please call the Cottonwood SWCD Office at 507-831-1153 Ext #3.

*Cottonwood Soil and Water Conservation District Mission . . .
To help maintain a better environment for future generations, to encourage the wise use of our soil and water through programs and education.*

19. Water Planning Task Force- Meeting Agenda 4/26/16



Cottonwood Soil and Water
Conservation District
&
Cottonwood County



Cottonwood County Water Planning Task Force Meeting
Tuesday, April 26, 2016 ~ Law Enforcement Center ~ Windom, MN

AGENDA

Introductions

Kay Gross, District Administrator

Review of Comprehensive Local Water Plan – Scoping Document

Buffer – Discussion

Final Comments and Questions

Next Step is for the Cottonwood County Commissioners for Approval

Submit to BWSR for Comment

Submit for State Agency Review

E.7 Review of Cottonwood County Comprehensive Local Water Plan

As part of the Water Planning Process, Cottonwood County sent out the proposed water plan for review to the Water Plan Task Force, held a public hearing to allow public comment and then sent out to state agencies for comment on the proposed plan. The concerns were as follows:

E.7.1 Comments received by the Water Plan Task Force prior to the Public Hearing

- Bruce Gross, MN Deer Hunters Association - Submitted Mark-up of plan, included changes to Goals and Objectives to include the Cottonwood County Attorney, and Enforcement.
- Jan Voit, Heron Lake Watershed District – Submitted mark-up of plan. Formatting suggestions only.
- Norman Holmen, Cottonwood County Commissioner – “Wow, very impressive, comprehensive plan. Would be a lot simpler if we did not have so many watersheds running thru the county. I will not be able to attend the meeting next Thursday as I have another meeting scheduled, but great work. THANKS.”
- Kevin Stevens, Cottonwood County Commissioner – “Looks good to me”.
- Robert Sip, MN Dept. of Ag – “Just a couple comments: Consider a plan of action to reach out to Certified Crop Advisers that work with clients in Cottonwood County to inform them of the goals and objectives of the Cottonwood County Water Plan. Also consider reaching out to agricultural groups in Cottonwood County to inform them of the goals of the water plan. There may be potential partnerships that could be made to further the goals of the plan. Otherwise no other comments. Looks good and thanks for the opportunity to comment” – Incorporated into water plan
- Erik Dahl, Minnesota Environmental Quality Board – “Thank you for the opportunity to Review”

E.7.2 Comments Received during the State Agency Review Period

- Amanda Strommer, MDH, Received 3/31/17 – No Comments on behalf of the MDH.
- Rob Sip, MDA, received 4/3/17 – Comments on developing a plan of action to reach out to Certified Crop Advisers and Agriculture Groups to inform them of goals and objectives of the Water Plan, and changing Drainage Management to Un-managed drainage in Objective 3a. – Incorporated into the water plan (except for comment striking Management and replacing it with unmanaged on Objective 3.a).
- Jill Sackett Eberhart, BWSR, received 4/12/17 – Comments on Formatting and adding/referencing the Priority Concerns Scoping Document - Incorporated into the water plan

E.7.3 Steps for Adoption of the Cottonwood County Comprehensive Local Water Plan

The Cottonwood County Comprehensive Local Water Plan (CCCLWP) will go before the BSWR Southern Regional Committee Meeting on May 4th, 2017. Once that meeting has been completed, the CCCLWP will go before the BWSR Board meeting (tentatively May 24th, 2017) for final review. Once the CCCLWP is reviewed and approved by the BWSR Board, it will require adoption by the Cottonwood County Board of Commissioners.

**ADDENDUM 1. COTTONWOOD COUNTY SOIL AND WATER OFFICE RESOLUTION
AND OTHER WATERS MAPS**



**COTTONWOOD
SOIL AND WATER CONSERVATION DISTRICT**

**Cottonwood Soil and Water Conservation District
Resolution**

**To Adopt Cottonwood County Other Waters Map for inclusion in the
Cottonwood County Comprehensive Local Water Management Plan
2017 – 5 - 25**

Whereas; Minnesota statutes 103F.48 requires SWCDs in consultation with local water management authorities, to develop, adopt, and submit to each local water management authority within its boundary a summary of watercourses for inclusion in the local water management plan.

Whereas; The Board of Water and Soil Resources has adopted the Local Water Resources Riparian Protection ("Other Watercourses") Policy August 25, 2016 which identifies steps SWCDs are required to take in developing said inventory.

Whereas; Cottonwood Soil and Water Conservation District (SWCD) has met with local water management authorities and Water Plan Task Force within its jurisdiction.

Whereas; Cottonwood SWCD and the water management authorities within its jurisdiction discussed watershed data, water quality data and land use information as a criteria in development of this list.

Whereas; Cottonwood SWCD has assessed the water quality benefits that buffers and alternative practices could provide and determined that current State and Federal programs have eligibility criteria for watercourses where water quality would benefit from the installation of a buffer or filter strip.

Whereas; The Cottonwood SWCD determined that the rational for inclusion of "other watercourses" is to be inclusive of all watercourses where water quality would benefit from the voluntary installation of a buffer or filter strip.

Therefore be it resolved that; The summary of watercourses or "other waters" for Cottonwood County shall be in map format and a written description.

Be it further resolved that; the map of watercourses to be included **shall be** all watercourses deemed eligible for the adjacent land to be voluntarily enrolled into a buffer or filter strip practice under the current eligibility criteria for state and federal programs which is depicted as a 30 foot minimum. Excluding those watercourses depicted on the DNR buffer protection map.

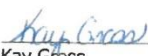
A list of watercourses included in this descriptive inventory not depicted on the map are:

Seasonal streams depicted on USGS topographic maps; seasonal streams depicted on soil survey maps, drainage ditches that are perennial or season streams.

Adopted on a 4 to 0 vote by the Cottonwood Soil and Water Conservation District Board of Supervisors on May 25, 2017.

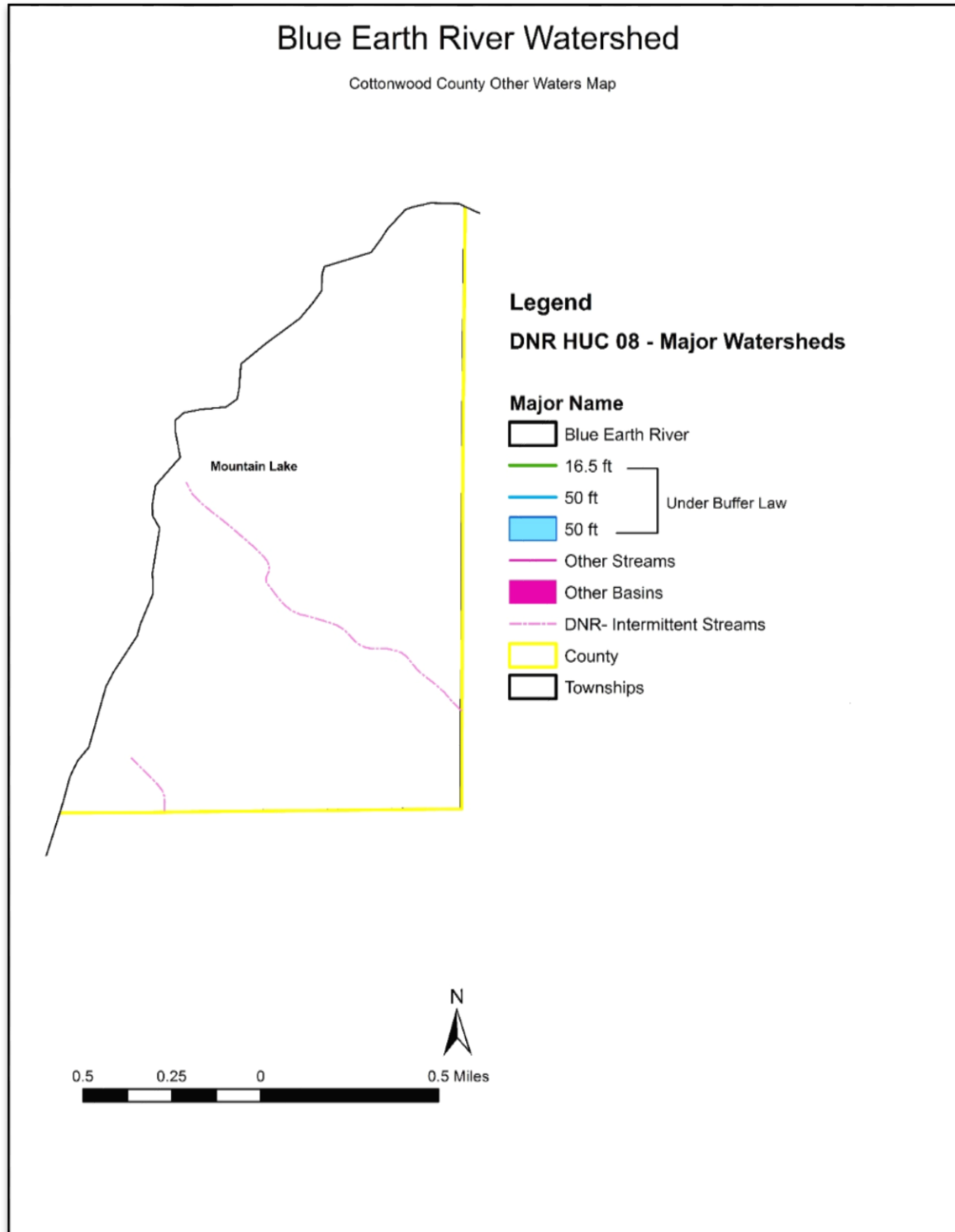

Clark Lingbeek
Cottonwood SWCD Board

ATTEST:


Kay Gross
Cottonwood SWCD District Administrator

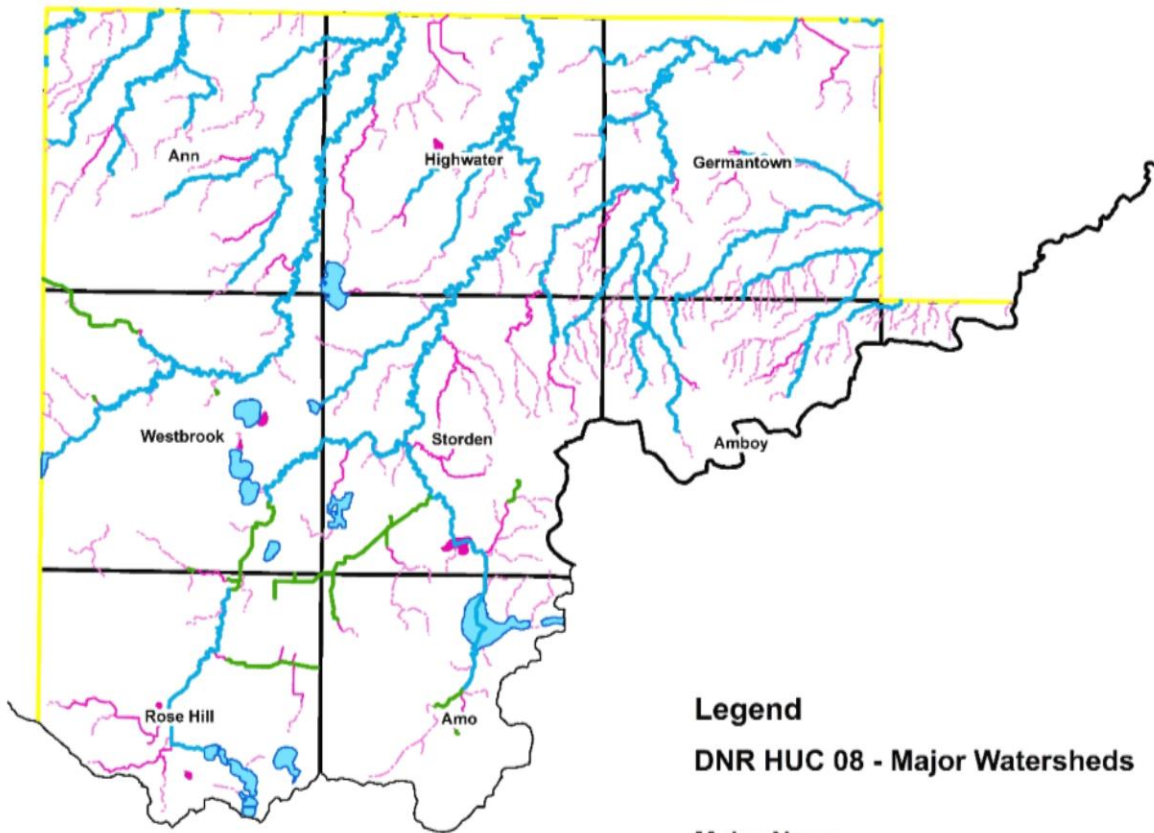
Blue Earth River Watershed

Cottonwood County Other Waters Map



Cottonwood River Watershed

Cottonwood County Other Waters Map

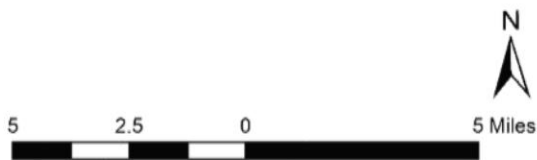


Legend

DNR HUC 08 - Major Watersheds

Major Name

- Cottonwood River
 - 16.5 ft
 - 50 ft
 - 50 ft
 - Other Streams
 - Other Basins
 - DNR- Intermittent Streams
 - County
 - Townships
- Under Buffer Law



West Fork Des Moines River Watershed

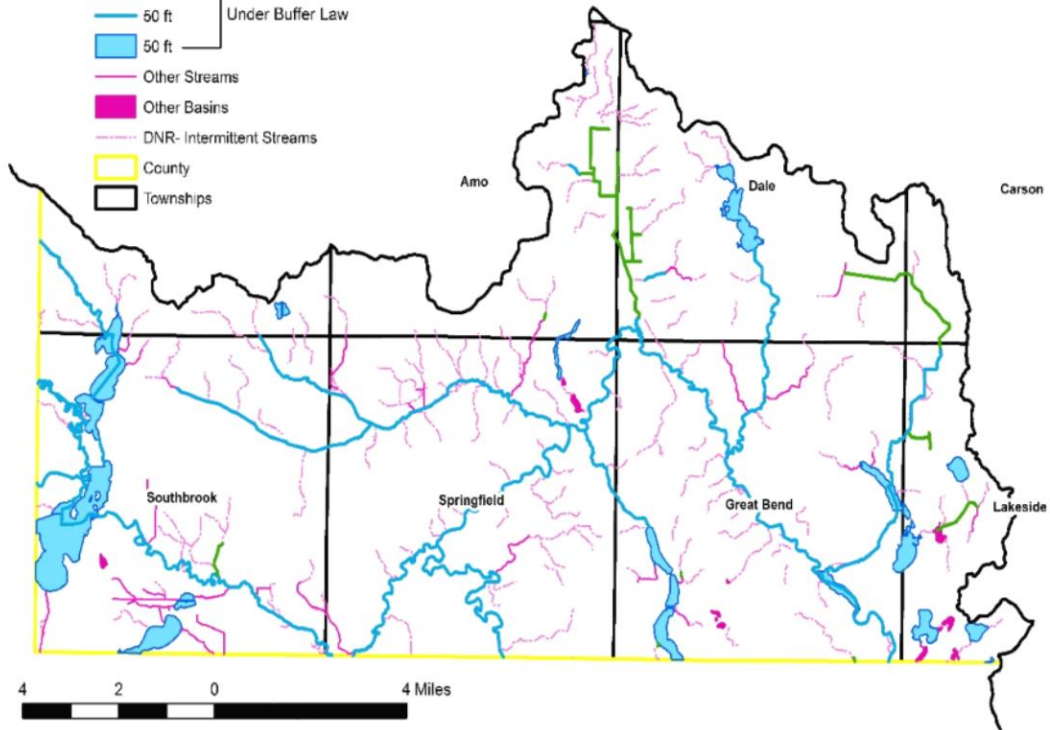
Cottonwood County Other Waters Map

Legend

DNR HUC 08 - Major Watersheds

Major Name

-  Des Moines River - Headwaters
-  16.5 ft
-  50 ft
-  50 ft
-  Other Streams
-  Other Basins
-  DNR- Intermittent Streams
-  County
-  Townships












Middle Minnesota River Watershed

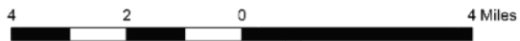
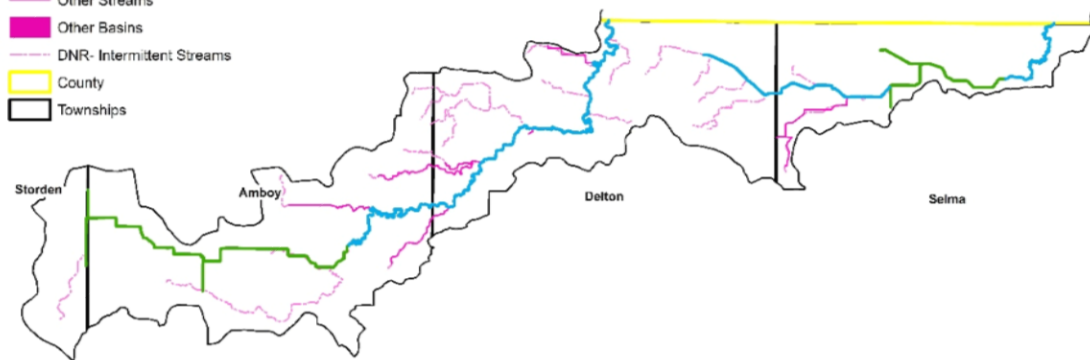
Cottonwood County Other Waters Map

Legend

DNR HUC 08 - Major Watersheds

Major Name

-  Minnesota River - Mankato
 -  16.5 ft
 -  50 ft
 -  50 ft
 -  Other Streams
 -  Other Basins
 -  DNR- Intermittent Streams
 -  County
 -  Townships
- Under Buffer Law



Watonwan River Watershed

Cottonwood County Other Waters Map

