



Water and Natural Resources Policy Analysis

For Todd, Morrison, Cass, Crow Wing, and Wadena Counties

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Region Five Photos at <http://s1184.photobucket.com/home/mnregionfive>

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Introduction

The following document analyzes Todd, Morrison, Cass, Crow Wing, and Wadena County policies relating to water and natural resources. This document is one piece of a larger analysis that addresses the five counties' policies regarding topics of land use, transportation, housing, economic development, parks, trails, open space, and recreation, water and natural resources, intergovernmental coordination, and healthcare. To ensure clarity, each topic is analyzed separately in its own document. Research and analysis was undertaken to provide the Region Five Development Consortium with a clearer understanding of how current policies relate and differ from each other across counties. The following analysis will be helpful for workgroups to develop regional policies and recommendations, which will be adopted by the full consortium to guide the future growth and development of Region Five in a sustainable manner.

Methodology

The following policies were taken from Todd, Morrison, Cass, Crow Wing, and Wadena County's most recent Comprehensive Plans. This document addresses the similarities, differences, and potential conflicts between county policies regarding economic water and natural resources. Due to the uniqueness of each plan, not all counties addressed similar issues around the topic at hand. For this reason, policies were only included if at least two of the five counties addressed the issue. Additionally, each county's policies are written at a different level of specificity making it difficult to compare/contrast a detailed policy with a vague policy. For the purpose of this analysis, policies were considered similar to each other even when they differ on the level of detail.

For this analysis, sub-topics were created to guide the reader throughout the document. For example, this document contains sub-topics of surface and ground water quality, forest resources, natural resources, air quality, and so forth. Under each sub-topic, similarities, differences, and conflicts between county policies on an issue were analyzed and grouped into categories. Categories are listed as follows: Very Similar, Similar, Somewhat Similar, Unique/Potentially Conflicting, and Unique. Policies in the Very Similar category are ones that relate to each other at a clear level of specificity; policies under the Similar category are ones that relate in vision but not in detail; policies under the Somewhat Similar category relate to each other more similarly than uniquely; policies under Unique/Potentially Conflicting category are in potential disagreement with other policies pertaining to the same issue; and policies that are considered unique have some relationship to the issue at hand but are not similar to each other. Due to policies relating to more than one sub-topic, it is possible that the same policy will be included across sub-topics and categories. It is also possible that not all categories were used in this document, depending on how county policies relate to each other.

It is important to note that not all counties addressed issues of water and natural resources in detail, if at all, in their comprehensive plans. However, each county does have a county water plan and some have a conservation/natural resources plan. For the purpose of this analysis, only county policies from comprehensive plans were looked at. Policies in County water or natural resources plans were not included in this analysis. For this reason, this analysis does not go in depth as to how counties relate and differ from each other regarding issues or water and natural resources.

To make it clear to understand, each policy has been assigned a color that corresponds with a county. The county color code can be seen in the footer of each page. Additionally, text that is bolded and highlighted signifies the relationship between policies under a category. Furthermore, a sources list is included below in this methodology section to provide readers with links to each county's most updated comprehensive plan.

Sources

1) Todd County 2030 Comprehensive Plan:

http://www.co.todd.mn.us/HTML_Files/Departments/Documentation/ToddCounty2030ComprehensivePlan.pdf

2) Morrison County Comprehensive Plan (adopted 2005):

<http://morrisonmn.govoffice3.com/vertical/Sites/%7BC8FCCAFF-AECD-45DC-91B1-016A998EB4A8%7D/uploads/%7B77B3A859-82C4-4E06-AC2D-04350EE16357%7D.PDF>

3) Cass County Comprehensive Plan (2008-2012):

http://www.co.cass.mn.us/esd/pdfs/comp_plan.pdf

4) Crow Wing County Comprehensive Plan (2003-2023):

http://www.co.crow-wing.mn.us/planning_zoning/ordinances/docs/2004_COMPREHENSIVE_PLAN.pdf

5) Wadena County Comprehensive Plan (1999):

<https://r5dscrp.basecamphq.com/projects/7032816/file/85211367/WadenaCountyComplan.pdf>

Findings

I. Natural Resources

Todd, Morrison, and Wadena County all have similar policies regarding natural resources. They all say they would like to preserve the natural resources in the County. However, their techniques and reasons for preserving natural resources differ. Todd County is the only county out of these three that state how they should preserve natural resources. Their policy says that land development adjacent to floodplains, shore lands and wetlands should be regulated to preserve natural resource areas as attractive amenities. They also promote land management practices that protect natural resources.

Wadena County would like to preserve natural resources in an effort to create an environmentally healthy and vibrant place for current and future residents. Morrison County does not state their reason for preserving natural resources. Additionally, some of these county policies define what natural resources they would like to preserve. Morrison County says that natural resources that are critical and sensitive should be preserved including wildlife habitats, wetlands, forest lands, etc. Similarly, Todd County says that other land resources should be preserved including agricultural and forest land, recreation and open space, scenic areas, and significant historic and archaeological sites. Cass and Crow Wing County do not address this issue.

II. Forest Resources

Regarding the protection of forest resources, both Todd and Morrison County have similar policies. They both would like to protect forest resources in the County. Todd County adds that they would like to promote the use, conservation and preservation of forest resources. Similarly, Crow Wing County places high priority on protecting forested green space.

Regarding the identification of valuable forested areas, Todd and Crow Wing County have somewhat similar policies. Todd County would like to develop a forest resources plan that will guide the development of forest resources in the county. For more information on what topics the plan will address please refer to IIB1a. Crow Wing County would like to identify valuable forested areas, green space, and working lands. For more information as to how they would like to protect these valuable areas please refer to IIB1b below.

Regarding the issue of forest management education, Todd, Morrison, and Crow Wing County have similar policies. They all agree that there should be some type of forest management education program. Todd County says that forest management educational

programs should be addressed in their Forest Resources Plan. Additionally, they support the implementation of community forestry programs to promote good forest management practices. Morrison and Crow Wing County state that the public should be educated about protecting and managing forest resources. Crow Wing County says that residents who own forested land should especially be educated on how to protect and manage their private forest resources. Furthermore, Todd, Morrison, and Crow Wing County have unique policies regarding this topic. For more information on unique policies regarding this topic please refer to IIB3 below. Cass and Wadena County do not address this issue.

III. Water Pollution

Regarding water pollution, specifically the identification of pollution sources, Crow Wing and Wadena County have similar policies. Crow Wing County states that they would like to identify and reduce water pollution from point and non-point sources while Wadena County states they should identify areas that are sensitive to water contamination. Uniquely, Crow Wing County would like to reduce pollution of water resources from wastewater treatment and Wadena County would like to prevent contamination of their ground water. For more information on Crow Wing and Wadena County's unique policies please refer to IIIA2 below.

IV. Surface Water Quality

Regarding surface water quality, all counties have similar policies. They all would like to protect the quality of surface water in their county. Wadena County is the only county that does not explicitly state they would like to protect surface water quality, they only say they would like to protect water quality in general. Additionally, a few county policies also state that they would like to improve the quality of water. For example, both Cass and Crow Wing County state they would like to restore water quality in areas where degradation has occurred. For more information on how county policies relate to each other please refer to IVA1 below.

Regarding stormwater management, Todd and Cass County have somewhat similar policies. Todd County states that they would like to evaluate the impact of stormwater runoff and determine the need for stormwater management controls. Somewhat similarly, Cass County would like to create and implement stormwater management plans. Morrison, Crow Wing, and Wadena County do not address the issue of stormwater management in their comprehensive plans.

Regarding the issue of land use as it relates to surface water, Todd and Cass County have somewhat similar policies. They both would like to develop land use decisions and practices to protect sensitive areas. Todd County states that they encourage and promote land-use practices that protect and improve surface water resources while Cass County does not explicitly that land use/development standards should be developed for surface

water protection. However, this is implied as it falls under a surface water quality goal in their comprehensive plan. Morrison, Crow Wing, and Wadena County do not address the issue of land use as it relates to surface water in their comprehensive plans.

V. Surface Water Quantity

Both Todd and Cass County have similar policies regarding the issue of surface water quantity. They both state that they would like to monitor surface water quantity. Additionally, Cass County has more detailed policies that state how they will work to monitor the existing volume and flow of surface water. For more information on these policies please refer to VA1 below. Uniquely, Cass County would like to monitor water use to assure adequate surface water resources. Morrison, Crow Wing, and Wadena County do not address this issue.

VI. Groundwater

Todd, Morrison, Cass, and Crow Wing County all have similar policies regarding the protection of groundwater. They all would like to protect and/or preserve the groundwater quality in their county. Some of these policies are more detailed than others stating how they would like to protect/preserve groundwater quality. For Example, Todd County would like to protect and preserve groundwater supply and quality through well protection plans and through programs such as the County water planning process, lake associations, and watershed districts. Similarly, Crow Wing County would like to gather information regarding groundwater quality/quantity. Wadena County would like to make the protection of groundwater quality and quantity a routine consideration in all government decisions involving planning and zoning.

Regarding wellhead protection, Todd, Cass, and Crow Wing County all have similar policies. The three counties all support the development and implementation of wellhead protection plans. Cass and Crow Wing County go more into detail with other similar policies. Cass County states that they would like to use the regional groundwater flow model to implement wellhead protection programs. Additionally, they promote the implementation of water well abandonment and closure programs. Crow Wing County says that wells in Wellhead Protection Areas should be tested for high nutrient levels. Todd, Morrison, and Wadena County do not address the issue of wellhead protection plans.

Relating to the issue of groundwater contamination, Todd, Cass, Crow Wing, and Wadena County all have similar policies. They all state that they would like to protect or prevent groundwater resources from contamination. For more information as to how counties plan to protect groundwater from contamination please refer to VIC1 below.

Regarding groundwater recharge, Todd, Cass, and Crow Wing County have somewhat similar policies. They all state that sensitive areas should be identified and/or analyzed.

Additionally, Todd County says that recharge areas should be defined for major aquifers. Cass County says to identify possible negative recharge area impacts for new proposed developments or plats. Crow Wing County says areas of groundwater sensitivity, recharge areas for aquifers, and ground water flow should be analyzed to determine land use activities and development. Somewhat similarly, Todd County encourages land-use practices that enhance the quality of groundwater recharge.

VII. Water Monitoring

Regarding surface water quality monitoring, Todd and Crow Wing County have similar policies. They both state that water quality monitoring should be conducted to establish to provide data on degradation of water quality. However, Crow Wing County does not specify if monitoring should be carried out for surface and/or groundwater. Additionally, Crow Wing County states that this data should be used to determine when action is needed to protect and restore water quality. Furthermore, Todd County would like to establish a priority listing of wetlands and lakes in the County on which to monitor surface water quality. Morrison, Cass, and Wadena County do not address this issue.

Relating to the topic of groundwater monitoring, Todd, Cass, and Crow Wing County have somewhat similar policies. Todd County would like to increase the level and extent of groundwater testing. Cass County would like to create a groundwater-monitoring program. Crow Wing County would also like to create a water quality monitoring program, but do not specify whether they would like to test surface and/or groundwater. Cass County has somewhat of a similar policy that states they would like to monitor the use of groundwater resources. Todd and Cass also have unique policies relating to this issue. For more information on unique policies please refer to VIIB3 below. Morrison and Wadena County do not address this issue.

VIII. Wetlands

Regarding wetland protection, Cass, Crow Wing, and Wadena County have similar policies. They would all like to protect/preserve existing wetlands. Additionally, Cass County supports programs that protect wetlands from development impacts.

Regarding the inventory of wetlands, Todd, Cass, Crow Wing, and Wadena County all have similar policies. They all state that a wetland inventory should be developed. Todd, Cass, and Wadena County say that wetlands in this inventory should be prioritized. Furthermore, Wadena County is the only county that specifies how they should prioritize these wetlands, stating that wetlands at least five acres in size and along lakes/streams should be given initial priority.

Additionally, Cass and Wadena County have policies that similarly relate to this issue. Cass County says that they would like to identify wetlands that may be significant fro

groundwater recharge. Wadena County says that drained wetlands should also be inventoried and investigating for potential restoration.

Regarding a wetland management plan, Cass and Crow Wing County have very similar policies. They both state that management plans should be developed for priority wetlands.

Furthermore, Cass and Wadena County have unique policies regarding cooperative efforts between agencies and clubs in the region. For more information please refer to VIID1 below.

IX. Shoreland

Both Todd and Crow Wing County have somewhat similar policies regarding shoreland ordinances and management. Todd County would like to enforce and update shoreland ordinances and regulations on a regular basis. Similarly, Crow Wing County would like to revise and strengthen County shoreland ordinances. Additionally, Morrison County has a policy to update the County Water Plan to address latest issues in shoreland management.

Furthermore, Crow Wing County has unique policies regarding shorelands. Please refer to IXA3 below for more information. Cass and Wadena County do not address this issue in their comprehensive plans.

X. Erosion

Todd and Crow Wing County have somewhat similar policies regarding soil erosion. Both counties would like to employ erosion-control practices to minimize erosion. Crow Wing County goes more into detail as to how erosion should be dealt with. For example, they encourage shoreland vegetative cover and silt fences to minimize erosion.

Somewhat similar to these policies, Wadena would like to identify soil erosion areas along critical lakeshores, rivers, and streams. Furthermore, Crow Wing County has unique policies regarding erosion (please refer to XA3 below). Morrison and Cass County do not address this issue.

XI. Environmental Education

Cass and Crow Wing County have somewhat similar policies regarding the issue of environmental education. Cass County would like to work cooperatively with departments and agencies to provide accurate, useful environmental information. Crow Wing County would like to develop environmental education programs for citizens, professionals, youth, and local government officials. Crow Wing County goes into detail

regarding these programs. Please refer to XIA1 for more information. Additionally, they would like to educate County residents about managing their private forest resources. Todd, Morrison, and Wadena County do not address this issue.

XII. Guiding Development

Todd and Wadena County have somewhat similar policies as to how to guide future development relating to natural resources. Todd County encourages the use of natural resource information for soils, topography, vegetation, groundwater, etc. in guiding rural land-use and development activations and urban expansion in the county. They encourage rural subdivision and urban development to conform to natural limitations and conditions. Similarly, Wadena County would like to identify and classify important natural resources which will be used to plan and direct future development. However, they do not say how this development will be guided in relation to these natural resources areas. Uniquely, Crow Wing County would like to reduce or restrict development of marginal shorelands. Morrison and Cass County do not address this issue.

XIII. Air Quality

Todd and Morrison County have very similar policies regarding air quality. They both would like to protect the air quality in the County to comply with Minnesota Pollution Control Agency standards. Similarly, Morrison County would like to consider the effect on air quality in review of any new development within the county. Additionally, they would like to implement air, dust, odor, and noise regulations. Cass, Crow Wing, and Wadena County do not address this issue.

XIV. Intergovernmental Coordination

No counties have similar policies regarding the coordination of water and natural resources within the county. For unique policies regarding this issue please refer to XIVA1 below.

XV. Lake Associations

Todd and Cass County have somewhat similar policies regarding lake associations. Todd County encourages the formation and continuation of lake associations to get more citizens involved in the management and protection of lakes. Similarly, Cass County would like to assist lake associations in their efforts to develop and implement management plans for individual lakes and watersheds. They would also like to assist them with the response to any identified impaired waters. Morrison, Crow Wing, and Wadena County do not address this issue.

Policy Analysis

I. Natural Resources

A. Natural Resources

1. Similar

- a) Regulate land development in the areas adjacent to floodplains, shore lands and wetlands **to preserve these natural resource areas** as attractive amenities.
- b) **Preserve natural resources identified as critical and sensitive** including wildlife habitats, wetlands, forest lands, etc., within Morrison County.
 - i. Identify and map all critical and sensitive natural resources within Morrison County.
- c) **Wadena County will protect, conserve, and preserve the natural resources of the County** in an effort to create an environmentally healthy and vibrant place for current and future residents.

2. Similar to Above (IA1)

- a) Promote land management practices **that protect the natural resources in the County.**
- b) **Protect, preserve and enhance the County's land resources**, including agricultural and forest land, recreation and open space, scenic areas, and significant historic and archaeological sites.

II. Forest Resources

A. Protection of Forest Resources

1. Similar

- a) **Promote the use, conservation and preservation of forest resources** and a healthy forest products industry.
- b) **Protect the forest resources of Morrison County** through the wise utilization of forestry management practices.

2. Similar to Above (IIA1)

- a) **Place high priority on protecting forested green space** and working lands in watersheds when planning for land use.

B. Identification of Valuable Forested Areas

1. Somewhat Similar

- a) Develop a Forest Resources Plan that will guide the development of forest resources in the County. The plan should address topics such as **identifying potential sites for agro-forestry projects (hybrid poplar plantations), identifying and enhancing significant natural resource corridors such as the Long Prairie River (riparian streamside planting project)**, forest management educational programs, and marketing approaches including efforts such as Green Certification, Tree Farm certification and other accepted forestry programs.
- b) **Work to identify valuable forested areas, green space, and working lands** within each watershed and protect them through means such as conservation easements, use of cluster developments when appropriate, promotion of native buffer zones, protection of public land, government acquisition of forest land and open space.

C. Forest Management Education

1. Similar

- a) Develop a Forest Resources Plan that will guide the development of forest resources in the County. The plan should address topics such as identifying potential sites for agro-forestry projects (hybrid poplar plantations), identifying and enhancing significant natural resource corridors such as the Long Prairie River (riparian streamside planting project), **forest management educational programs**, and marketing approaches including efforts such as Green Certification, Tree Farm certification and other accepted forestry programs.

- b) **Support public education programs related to forestry management and protection.**
- c) **Educate County residents** - particularly those who own forested land – **about protecting and managing their private forest resources.**

2. Similar to Above (IIC1)

- a) **Support the implementation of community forestry programs that bring landowners, community leaders, youth, forestry professionals and other citizens together to promote good forest management practices.**

3. Unique

- a) Support the creation of a wood products cooperative to help market wood products produced in the County. The marketing approach should promote sustainable practices and value-added products.
- b) Encourage landowners to increase and enhance wildlife habitat in the County.
- c) Preserve, to the extent possible, trees within new proposed developments and define appropriate clearing of trees for normal construction and view.
- d) Support the forestry management practices, programs, and policies of the Minnesota DNR and the Camp Ripley Military Reservation.
- e) **Policy Management Plan for the Tax-Forfeited Lands of Crow Wing County and encourage the private forest landowner to manage their forests based upon professional forest resource management principles and techniques as outlined in the manual entitled, “Sustaining Minnesota Forest Resources”, which is a voluntary set of guidelines to assist forest landowners.**
- f) **Follow the Policies and practices laid forth in the 2000 Forest Management Plan for the Tax-Forfeited Lands of Crow Wing County.**

III. Water Pollution

A. Identification of Pollution Sources

1. Similar

- a) **Identify and reduce water pollution from point and non-point sources.**
- b) **Identify areas within the County that are sensitive to water contamination** from land use, such as Lead and Shell river watershed, and urban growth areas.

2. Unique

- a) To reduce pollution of water resources from wastewater treatment.
- b) Prevent contamination of Wadena County's ground water.
 - i. Support continuation of agriculture conservation plans for County farmers.
 - ii. Encourage regular, preferably annual soil testing for farmers through state certified testing services. Encourage proper use of fertilizers, allowing for natural organic nutrient credits, by preparing brochures on recommended fertilizer application limits for major soil types of the County.
 - iii. Inventory and evaluate current feedlot regulations with the livestock producer representatives. Provide public notice and receive public comment prior to any recommendations for change. Provide education and information to insure good management practices.
 - iv. Seal all abandoned wells withing a buffered area along the natural gas line corridors within the County.
 - v. Adopt and initiate specific plans for the provision of adequate waste water collection and treatment systems for all areas of the County with dense development that are lacking such systems.

IV. Surface Water Quality

A. Surface Water Quality

1. Similar

- a) **Protect the quality and use of surface water** through programs such as the County water planning process, lake associations and watershed districts.

- b) **Protect the quality of surface and ground water** within Morrison County through the implementation of the Morrison County Water Plan.
 - i. Continue to support the efforts of public and private organizations such as the Minnesota DNR and state and local lakes associations working to enhance surface water quality.
- c) **Preserve the quality of Cass County's surface water**, and where degradation has occurred, work to restore the surface water quality.
- d) **To protect, preserve, and improve the quality of Crow Wing County's lakes, streams and wetlands.**
- e) **Develop and computerize land use maps and use that information to protect water quality** and guide County policy decisions regarding future land use.
 - i. Identify areas within the County that are sensitive to water contamination from land use, such as Lead and Shell river watershed, and urban growth areas.
 - ii. Identify soil erosion areas along critical lakeshores and stretches of rivers and streams.

B. Stormwater Management

1. Somewhat Similar

- a) Evaluate the impact of stormwater runoff on surface water in the County and **determine the need for stormwater management controls.**
- b) Work with agencies, developers, and individuals to **create and implement stormwater management plans.**

C. Land Use

1. Somewhat Similar

- a) **Encourage and promote land-use practices to protect and improve surface water resources.**
- b) **Develop** a sensitive resource protection list for use in determining priorities for conservation easements, acquisitions, and other protection

programs as well as **land use decisions and establishing development standards. Promote conservation easements, prevention of forest and habitat fragmentation, and other forms of protecting sensitive areas.**

V. Surface Water Quantity

A. Surface Water Quantity

1. Similar

- a) Establish a priority listing of wetlands and lakes in the County on which **to monitor surface water quality and quantity.**
- b) **Monitor the Existing Volume and Flow of Surface Water.**
 - i. Use current studies to help develop water budget modeling for watersheds.
 - ii. Evaluate possible impacts of droughts on natural and economic resources.
 - iii. Support maintaining current water levels and lobby against unnecessary drawdowns of reservoirs and exportation of all surface waters.
 - iv. Establish a committee or task force of hydrology or related professionals in the region to make recommendations to any regional issues related to water quantity.

2. Unique

- a) Monitor water use to assure adequate surface water resources.

VI. Groundwater

A. Groundwater Protection/Preservation

1. Similar

- a) **Protect and preserve groundwater supply and quality** through

programs such as the County water planning process, lake associations and watershed districts.

- b) **Protect groundwater resources from contamination** through the development and implementation of Wellhead Protection plans and other programs.
- c) **Protect the quality of surface and ground water** within Morrison County through the implementation of the Morrison County Water Plan.
- d) **Preserve the quality of the County's ground-water** and where degradation has occurred, provide for restoration of groundwater quality.
- e) Utilize groundwater information in planning to **protect groundwater quality.**

2. Similar to Above (VIA1)

- a) **Gather information regarding groundwater quality/quantity** in Crow Wing County.
 - i. Obtain ground water quality information including raw data and assessment from the Minnesota Department of Health.
 - ii. Analyze areas of groundwater sensitivity, recharge areas for aquifers, and ground water flow to determine and map appropriate land use activities and development.
 - iii. Complete the Geological Atlas for Crow Wing County. Test wells in the County for high nitrates; prioritize testing for those in Wellhead Protection Areas.
- b) **Make protection of groundwater quality and quantity a routine consideration in all government decisions involving planning and zoning.**

B. Wellhead Protection Plans

1. Similar

- a) **Protect groundwater resources from contamination through the development and implementation of Wellhead Protection plans and other programs.**
- b) **Promote the development and implementation of wellhead protection**

plans for all public water supplies.

- c) **Assist communities with wellhead protection plans.**

2. Similar to Above (VIB1)

- a) **Promote the implementation of water well abandonment and closure programs.**
- b) **Use the regional groundwater flow model to implement a wellhead protection program.**
- c) **Complete the Geological Atlas for Crow Wing County. Test wells in the County for high nitrates; prioritize testing for those in Wellhead Protection Areas.**

C. Groundwater Contamination

1. Similar

- a) **Protect groundwater resources from contamination** through the development and implementation of Wellhead Protection plans and other programs.
- b) Encourage the coordination of land-use planning and water planning efforts in the County **to help protect groundwater resources.**
- c) **Prevent Contamination of Cass County's Groundwater Resources.**
- i. Continue enforcement of county subsurface sewage treatment system ordinance provision requiring individual sanitary treatment system evaluation and/or update at the time of property transfers.
 - ii. Develop and implement a systematic program of compliance inspections of SSTS not currently in compliance on a lake-by-lake or area-by-area basis, prioritized on the basis of housing density, soil suitability, and pollution potential. The purpose of this program is to inspect and inventory all of the existing SSTS in Cass County.
 - iii. Use the regional groundwater flow model to implement a wellhead protection program.
 - iv. Promote the implementation of water well abandonment and

closure programs.

- v. Utilize the regional groundwater flow model to identify possible negative recharge area impacts for new proposed developments or plats.
 - vi. Promote the development and implementation of wellhead protection plans for all public water supplies.
- d) Utilize Geological Atlas information and land use map to **develop appropriate local ordinances and zoning regulations to protect ground water.**
 - e) **Prevent contamination of Wadena County's ground water.**

D. Groundwater Recharge

1. Somewhat Similar

- a) **Identify geologically sensitive areas** in the County and define the limits and recharge areas of major aquifers.
- b) Utilize the regional groundwater flow model to **identify possible negative recharge area impacts for new proposed developments or plats.**
- c) **Analyze areas of groundwater sensitivity, recharge areas for aquifers, and ground water flow** to determine and map appropriate land use activities and development.

2. Somewhat Similar to Above (VID1)

- a) **Encourage land-use practices that enhance the quality of groundwater recharge.**

VII. Water Monitoring

A. Surface Water Quality Monitoring

1. Similar

- a) **Increase monitoring of surface water quality and quantity and establish a database on trends in degradation of surface water.**

- b) **Establish an organized water quality monitoring program to provide data to determine when action is needed to protect and restore water quality.**

2. Similar to Above (VIIA1)

- a) **Establish a priority listing of wetlands and lakes in the County on which to monitor surface water quality** and quantity.

B. Groundwater Monitoring

1. Somewhat Similar

- a) **Increase the level and extent of groundwater testing** in the County.
- b) **Create a County groundwater-monitoring program.**
- c) **Establish an organized water quality monitoring program to provide data to determine when action is needed to protect and restore water quality.**

2. Somewhat Similar to Above (VIIB1)

- a) **Monitor water use to assure adequate ground-water resources.**

3. Unique

- a) Establish a priority listing of wetlands and lakes in the County on which to monitor surface water quality and quantity.
- b) Monitor and manage recreational uses to protect water resources.
- c) Assist in monitoring of lakes for exotic species such as Eurasian water milfoil, spiny waterfleas, zebra mussels, and rusty crayfish and also for fish diseases such as VHS..

VIII. Wetlands

A. Wetland Protection

1. Similar

- a) **Preserve the functions, values, and extent of the County's wetland**

resources and support programs that protect wetlands from development impacts.

- b) **Protect wetlands** from development and degradation.
- c) Wadena County will recognize the value of **preserving its remaining wetlands** to maintain their value as fish and wildlife habitat, storm-water runoff storage areas, water filtering basins, and socioeconomic benefits.

B. Wetland Inventory

1. Similar

- a) **Establish a priority listing of wetlands** and lakes in the County on which to monitor surface water quality and quantity.
- b) **Develop a high priority wetland inventory.**
- c) **Develop a county-wide wetland inventory** and classification system.
- d) **Identify and map all wetlands** with initial priority going to those of at least five acres in size of those along lakes and streams.

1. Similar to Above (VIIB1)

- a) Use the wetland and groundwater models **to identify wetlands that may be the most significant for groundwater recharge.**
- b) **Inventory drained wetlands in the County and investigate restoration of critical wetlands.**

C. Wetland Management Plan

1. Very Similar

- a) **Develop and implement management plans for High Priority wetlands.**
- b) **Develop a wetland management and protection plan that provides for the protection of priority wetlands,** tightens Wetland Conservation Act exemptions, prioritizes wetland banking replacement ratios for wetland fill based on wetland classifications, creates wetland banks in the County, and establishes wetland setbacks and buffers on all development projects.

D. Cooperative Efforts

1. Unique

- a) Work cooperatively with departments, agencies, watershed organizations, foundations, developers, and individuals to place wetlands in conservation easements or similar protective mechanisms.
- b) Identify the Wadena Soil and Water Conservation District Office as lead agency for jurisdictions for all wetlands in the County.
- c) Work with and give technical advice to Sportsmen Clubs within the County on the development of Wildlife Refuges and Wetland Areas.

IX. Shoreland

A. Shoreland

1. Similar

- a) Enforce floodplain, shore land and wetland ordinances and regulations in a consistent manner. The County will update and maintain these regulations on a regular basis as appropriate.
- b) Revise, strengthen, and enforce the County Shoreland Ordinance to address current and anticipated development patterns.

2. Somewhat Similar to Above (IXA1)

- a) Continue to update the Morrison County Water Plan to address the latest issues in shoreland management within Morrison County and continue the protection of shoreland areas within the County.

3. Unique

- a) Reduce or restrict the development of marginal shorelands.
 - i. Map all marginal lands county-wide, including wetlands, steep slopes and undeveloped shoreline.

- ii. Develop criteria for prioritizing these areas with respect to ecological and recreational value, redevelopment potential, and other critical factors.
- iii. Develop performance-based planning and zoning requirements for development of marginal lands.
- iv. Encourage conservation easements of marginal land to limit development.

X. Erosion

A. Erosion

1. Somewhat Similar

- a) **Promote soil conservation and erosion-control practices** in both urbanized and rural portions of the County.
- b) **Encourage shoreland vegetative cover to minimize erosion** and sedimentation.
- c) **Require silt fences and other erosion control devices** to be in place during construction.

2. Somewhat Similar to Above (XA1)

- a) **Identify soil erosion areas** along critical lakeshores and stretches of rivers and streams.

3. Unique

- a) Address development in areas with poor soils and steep slopes using performance based zoning (see chart on page 82 of Crow Wing County's Comprehensive Plan).
- b) Support updating the soil survey for Crow Wing County to gain a better understanding of soils and the erosion potential, and incorporate that data with land use regulations.
- c) Conduct demonstration projects for shoreland landscaping and publicize the results.

XI. Environmental Education

A. Environmental Education

1. Somewhat Similar

- a) **Work cooperatively with other departments and agencies to provide accurate, useful environmental information.**
- b) **Develop education programs for citizens, professionals, youth, and local government officials (county, township, and municipalities).**
 - i. Conduct annual workshops, develop educational brochures on water resource protection and land use regulations, and utilize newspapers and other media to provide education on water resource protection.
 - ii. Support existing water resource protection groups in the county, e.g. Lakes and Rivers Alliance, lake associations, and conservation groups, in carrying out their programs and plans for education on water resource protection.
 - iii. Encourage schools at all levels to incorporate environmental education on water resource protection into their curriculums.
 - iv. Develop training programs for realtors, developers, builders, and elected and appointed local officials on the impacts of land use decisions on water quality.
 - v. Attach shoreland “best management practices” to all building permits in shoreland areas.

2. Similar to Above (XIA1)

- a) **Educate County residents** - particularly those who own forested land – **about protecting and managing their private forest resources.**

XII. Guiding Development

A. Guiding Development

1. Somewhat Similar

- a) **Encourage the use of natural resource information for soils, topography, vegetation, groundwater, etc., in guiding rural land-use and development activities and urban expansion in the County.**
- b) **Encourage rural subdivisions and urban development to conform to the natural limitations presented by topography, soils and other natural conditions.**
- c) **Identify and classify important natural resources which will be used to plan and direct future development in Wadena County.**

2. Unique

- a) Reduce or restrict the development of marginal shorelands.

XIII. Air Quality

A. Air Quality

1. Very Similar

- a) **Protect the air quality in the County to comply with Minnesota Pollution Control standards.**
- b) **Protect the air quality of Morrison County through the support and implementation of MPCA standards.**

2. Similar to Above (XIIIA1)

- a) **Implement air, dust, odor, and noise regulations** contained within the Morrison County Land Use Ordinance.
- b) **Consider the effect on air quality in review of any new development** within the County.

XIV. Intergovernmental Coordination

A. Intergovernmental Coordination

1. Unique

- a) Encourage the coordination of land-use planning and water planning efforts in the County to help protect groundwater resources.
- b) Support the coordination of planning and implementation efforts between the Sauk River, Watershed District, lake associations, Todd SWCD, Planning and Zoning Department, and state and federal agencies.
- c) Support the forestry management practices, programs, and policies of the Minnesota DNR and the Camp Ripley Military Reservation.
- d) Coordinate efforts between the County, municipalities, townships, state and federal agencies, and tribal government to assure wise land use, economic development, and the protection of natural resources.
- e) Coordinate with the Leech Lake Band of Ojibwe on land use regulation and natural resource protection efforts.
- f) Work cooperatively with other departments and agencies to provide accurate, useful environmental information.
- g) To work cooperatively with other agencies in implementing plans and projects based on watershed-wide priorities.
- h) Identify the Wadena Soil and Water Conservation District Office as lead agency for jurisdictions for all wetlands in the County.
- i) Work with and give technical advice to Sportsmen Clubs within the County on the development of Wildlife Refuges and Wetland Areas.

XV. Lake Associations

A. Lake Associations

1. Somewhat Similar

- a) Encourage the formation and continuation of lake associations to get more citizens involved in the management and protection of the County's lakes.
- b) Assist lake associations in their efforts to develop and implement management plans for individual lakes or

watersheds.

- c) **Assist Agencies, Lake Associations, and other local units of government with the response to any identified impaired waters.**