

**CASS COUNTY ENVIRONMENTAL SERVICES**

**CASS COUNTY WETLAND ORDINANCE**

**EFFECTIVE JANUARY 1, 1998**

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# **CASS COUNTY WETLAND PROTECTION ORDINANCE**

## **ARTICLE 1 TITLE AND PURPOSE**

### ***Section 1.01. Title***

This Ordinance shall be known, cited, and referred to as the Cass County Wetland Protection Ordinance. When referred to herein, it shall be known as “this Ordinance.”

### ***Section 1.02. Purpose.***

This Ordinance is adopted for the purpose of:

- (A) Adopting certain alternative standards that shall apply to determinations by Cass County in its capacity as the local government unit for the state wetland conservation act program;
- (B) Adopting the state wetland conservation act program by reference as part of Cass County's official controls to provide an additional means for enforcement of the requirements of the state wetland conservation act program;
- (C) Adopting administrative procedures for performance of Cass County's responsibilities as the local government unit for the state wetland conservation act program that shall apply in addition to the administrative procedures set forth in the Wetland Conservation Act and Wetland Conservation Act Rules; and
- (D) Adopting as part of Cass County's official controls additional local requirements for the conservation of wetlands that are more restrictive than the requirements of the state wetland conservation act program.

### ***Section 1.03. Interpretation***

In their interpretation and application, the provisions of this ordinance shall be held to be minimum requirements and shall be liberally construed in favor of the governing body and shall not be deemed a limitation or repeal of any other powers granted by Minnesota Statutes.

### ***Section 1.04. Severability.***

If any section, clause, provision, or portion of this ordinance is adjudged unconstitutional or invalid by a court of law, the remainder of this ordinance shall not be affected.

### ***Section 1.05. Abrogation and Greater Restrictions .***

It is not intended by this ordinance to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance imposes greater restrictions, the provisions of this ordinance shall prevail. All other ordinances inconsistent with this ordinance are hereby repealed to the extent of the inconsistency only.

**Section 1.06.        Responsibility to Obtain Other Permits.**

Approval of an exemption or replacement plan under the terms of this ordinance and the Wetland Conservation Act does not express or imply approval by any other regulating jurisdiction. It is an applicant's sole responsibility to contact all other federal, state, or local agencies to make sure all necessary permits and approvals are granted concerning applicant's project.

**ARTICLE 2 DEFINITIONS**

**Section 2.01        Incorporation by reference.**

Terms used in this Ordinance which are defined in the Wetland Conservation Act or the Wetland Conservation Act Rules shall have the meanings given there, unless otherwise defined in this Ordinance.

**Section 2.02        Additional Definitions**

For purposes of this Ordinance, the following terms shall have the following meanings:

**Board** means the Board of Water and Soil Resources under Minnesota Statutes, section 103B.101.

**City** means a home rule charter or statutory city.

**Commissioner** means the commissioner of the Department of Natural Resources.

**County Board** means the Cass County Board of Commissioners

**Day** means working days when used in a time period of 15 days or less and calendar days when used in a time period greater than 15 days. The day of the event shall not be used in counting any period of time.

**Department or ESD** means the Cass County Environmental Services Department unless otherwise provided herein.

**Model** means the Cass County Wetland Functional Assessment Model which will serve as the local wetland plan in accordance with Minn. Stat. § 103G.2243 and Minn. R. 8420.0650 and which is herein adopted by reference.

**Special Protection Area** means an instance in which a proposed wetland impact is not allowed due to the existence, in the proposed project area or in an adjacent area, of cultural resources, special habitats, or rare and endangered species.

**State wetland conservation act program** means the program for the conservation of wetlands pursuant to the Wetland Conservation Act and the Wetland Conservation Act Rules, subject to alternative standards adopted by a local government unit under an approved local comprehensive wetland protection and management plan.

**Technical Evaluation Panel** means a panel of wetland delineators representing Cass County ESD, Cass SWCD, the Board of Water and Soil Resources, and other resource professionals which makes technical recommendations to the Department in relation to the provisions of this Ordinance.

**Wetland Conservation Act** means 1991 Minn. Laws ch. 354, as amended by 1993 Minn. Laws ch. 175, 1994 Minn. Laws ch. 627, 1996 Minn. Laws ch. 462, and by any subsequent amendments.

**Wetland Conservation Act Rules** means the rules adopted by the Board of Water and Soil Resources to implement the Wetland Conservation Act, Minn. R. ch. 8420 (1995), as amended by 20 Minn. Reg. 2629 (June 10, 1996), and by any subsequent amendments.

## **ARTICLE 3 STATE WETLAND CONSERVATION ACT PROGRAM**

### ***Section 3.01. Introduction.***

Cass County serves as the local government unit for the implementation of the state wetland conservation act program. The state wetland conservation act program requires that persons proposing to impact wetlands by draining or filling have demonstrated that the activity impacting a wetland has complied with all of the following principles in descending order or priority:

- A. avoid direct or indirect impacts to the wetland that may destroy or diminish the wetland
- B. minimize the impact to the wetland by limiting the degree or magnitude of the wetland activity and its implementation
- C. rectify the impact by repairing, rehabilitating, or restoring the affected wetland
- D. reduces or eliminates the impact to the wetland over time by preservation and maintenance operations; and
- E. replaces unavoidable impacts to the wetland by restoring or, if wetland restoration opportunities are not reasonably available, creating substitute wetland areas having equal or greater public value.

As the local government unit for the state wetland conservation act program, Cass County is responsible for approving replacement plans and making other determinations specified by the Wetland Conservation Act and the Wetland Conservation Act Rules. Article 3 pertains to determinations by Cass County in its capacity as the local government unit for the state wetland conservation act program.

### ***Section 3.02. State Standards.***

Cass County, in fulfillment of its responsibilities as the local government unit for the state wetland conservation act program, shall make exemption, no-loss, replacement plan, and banking determinations in accordance with the Wetland Conservation Act and the Wetland Conservation Act Rules, except as expressly provided in Section 3.03 of this Ordinance pertaining to alternative standards.

### ***Section 3.03. Alternative Standards.***

Pursuant to Minn. Stat. § 103G.2243, subd. 2 and Minn. R. 8420.0650, subp. 2, a local government unit which has adopted an approved comprehensive wetland protection and

management plan may vary certain standards that would otherwise apply to local government unit determinations under the Wetland Conservation Act and the Wetland Conservation Act Rules. In accordance with the model, the following alternative standards shall apply to determinations made by Cass County in its capacity as local government unit for the state wetland conservation act program:

**(A) Classification of wetlands.**

1. Authority for alternative standard. Minn. Stat. § 103G.2243, subd. 2(1) and Minn. R. 8420.0650, subp. 2(A) provide that a local government unit which has adopted an approved comprehensive wetland protection and management plan may provide for classification of wetlands in the plan area based upon an inventory of wetlands, an assessment of the wetland functions, and the resulting public value of the wetlands.

2. Findings in support of alternative standard. Cass County makes the following findings in support of its alternative standard for classification of wetlands:

**The Cass County Wetland Functional Assessment Model assigns specific locally-derived values to all wetlands in the County. Wetlands are rated for uniqueness, surface and groundwater quality protection, fisheries habitat, wildlife habitat, cultural resources, rare and endangered species, and flood attenuation. (see appendix A)**

3. Alternative Standard. Wetlands shall be classified for purposes of the application of the alternative standards in Sections 3.03(B), 3.03(C), 3.03(D), and 3.03(E) of this Ordinance **according to the Cass County Wetland Functional Assessment Model.**

**(B) Sequencing.**

1. Authority for alternative standard. Minn. Stat. § 103G.2243, subd. 2(2) and Minn. R. 8420.0650, subp. 2(B) provide that a local government unit which has adopted an approved comprehensive wetland protection and management plan may vary the application of the sequencing standards in Minn. Stat. § 103G.222, subd. 1(b) for projects based on the classification of wetlands and criteria set forth in the plan.

2. Findings in support of alternative standard. Pursuant to the model, Cass County makes the following findings in support of its alternative standard for sequencing:

**The analysis provided by the model has determined that allowing flexibility in sequencing for wetlands scoring 11 or less will not result in a net loss of wetland functions and values.**

3. Alternative standard. The application of the sequencing standards in Minn. Stat. § 103G.222, subd. 1(b) shall be varied as follows:

**For projects impacting wetland areas which scores 11 or less on the model as verified by the technical panel, the Department may provide an on-site**

**sequencing determination without written documentation from the applicant.**

**(C) Replacement.**

1. Authority for alternative standard. Minn. Stat. § 103G.2243, subd. 2(3) and Minn. R. 8420.0650, subp. 2(C) provide that a local government unit which has adopted an approved comprehensive wetland protection and management plan may vary the replacement standards of Minn. Stat. § 103G.222, subd. 1(f-g), based on the classification of wetlands and criteria set forth in the plan.

2. Findings in support of alternative standard. Pursuant to the model, Cass County makes the following findings in support of its alternative standard for replacement:

**The analysis provided by the model has determined that variations in the replacement ratio are warranted which allow no less than a replacement ratio of 0.5:1 on wetlands that score 11 or less, provided that the replacement wetland has equal or greater public value.**

3. Alternative standard. The replacement standards in Minn. Stat. § 103G.222, subd. 1(f)-(g) shall be varied as follows:

**For impacts to wetlands that score 11 or less pursuant to the model, after a recommendation by the Technical Evaluation Panel and approval by the Department, the minimum replacement ratio shall be 0.5:1.**

**(D) Expansion of exemptions in a greater than 80 percent area.**

1. Authority for alternative standard. Minn. Stat. § 103G.2243, subd. 2(5) and Minn. R. 8420.0650, subp. 2(E) provide that a local government unit in a greater than 80 percent area which has adopted an approved comprehensive wetland protection and management plan may, based on the classification of wetlands and criteria set forth in the plan, expand the application of the exemptions in Minn. Stat. § 103G.2241, subd. 1(a)(4), to also include nonagricultural land, provided there is no net loss of wetland values.

2. Findings in support of alternative standard. Pursuant to the model, Cass County makes the following findings in support of its alternative standard for expansion of the exemptions in Minn. Stat. § 103G.2241, subd. 1(a)(4):

**The analysis provided by the model has determined that allowing expansion in the application of exemption #1, WCA Rules 8420.0122, Subp. 1, Item D(1), for wetlands scoring 11 or less will not result in a net loss of wetland functions and values.**

3. Alternative standard. The exemptions in Minn. Stat. § 103G.2241, subd. 1(a)(4) shall be expanded as follows:

**Application of exemption #1, WCA Rules 8420.0122, Subp. 1, Item D(1), which states that no replacement plan is required for activities in a type 1 wetland on agricultural land (except for bottomland hardwood type 1**

wetlands) and activities in a type 2 or type 6 wetland that is less than two acres in size and located on agricultural land, is hereby expanded to apply to nonagricultural land, provided that the subject wetland has scored 11 or less as calculated by the Model and verified by the technical panel, per the provisions in Section 4.01.

**Section 3.04 Appeals.**

Exemption, no-loss, replacement plan, and banking determinations made by Cass County in its capacity as the local government unit for the state wetland conservation act program may be appealed to the Board of Water and Soil Resources pursuant to and in accordance with Minn. Stat. § 103G.2242, subd. 9 and Minn. R. 8420.0250.

**Section 3.05. Enforcement.**

The state wetland conservation act program is enforceable pursuant to and in accordance with Minn. Stat. § 103G.2372 and Minn. R. 8420.0290. In order to provide an additional means for the enforcement of the requirements of the state wetland conservation act program, the Wetland Conservation Act and the Wetland Conservation Rules, subject to the alternative standards set forth in Section 3.03 of this Ordinance, are hereby incorporated by reference as a part of Cass County's official controls. Violations of the Wetland Conservation Act and the Wetland Conservation Act Rules, subject to the alternative standards set forth in Section 3.03 of this Ordinance, shall be deemed to be violations of Cass County's official controls and may be enforced by Cass County in the same manner as any other violations of Cass County's official controls. Such enforcement of Cass County's official controls shall be in addition to enforcement under Minn. Stat. § 103G.2372 and Minn. R. 8420.0290 and shall not be deemed to amend, supersede, preempt, or otherwise alter enforcement under Minn. Stat. § 103G.2372 and Minn. R. 8420.0290.

**ARTICLE 4 ADDITIONAL LOCAL REQUIREMENTS**

Cass County finds that it is desirable to impose additional local requirements for the conservation of wetlands that are more restrictive than the requirements of the state Wetland Conservation Act program implemented pursuant to and in accordance with Article 3 of this Ordinance. This Article 4 adopts additional local requirements as part of the governing body's official controls.

**Section 4.01. Replacement Ratios and County Wetland Value Replacement Fund**

A. All unavoidable wetland draining and filling impacts that are not exempt under the state Wetland Conservation Act program must be replaced. Replacement will be accomplished as required by the WCA rules, or for replacement beyond that required by the WCA rules, the minimum size of the replacement wetland must be determined by the score for the impacted wetland as calculated by the model or the technical evaluation panel according to the following table:

REPLACEMENT RATIOS

<u>SCORE</u>	<u>REPLACEMENT RATIO</u>
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8-11	0.5:1
12-14	1:1
15-17	2:1
18-19	3:1
20-21	4:1
22-24	5:1

B. The scores generated by the Model shall not be final. The technical evaluation panel may review, evaluate, and/or amend the score generated by the model based on a site inspection. A technical panel review will be conducted if:

1. The score generated by the model is 18 or more, or 11 or less.
2. The wetlands in question was previously unidentified.
3. Requested by an applicant or technical evaluation panel member.

C. Modified scores will be determined based on the criterion in the model and on site specific factors. Two of the three members of the panel must vote for the chosen score. The technical evaluation panel recommendation on the score will be forwarded to the Department for consideration in processing the replacement plan application.

D. When replacement is to be accomplished using the Cass County Wetland Bank, revenue received for all replacement in excess of a 1:1 ratio shall be placed in a Cass County Wetland Value Replacement Fund. This fund will be available to landowners and local and state agencies for projects to restore and/or replace wetland functions and values lost due to impacts to wetlands authorized under this Article 4. Application will be made on forms provided by the Department.

**Section 4.02. Special Protection Areas**

A. When so indicated by the criteria in the model or the recommendation of the technical evaluation panel, certain areas may be designated as special protection areas. Wetland impacts to these areas may be restricted or not allowed. These areas may include but are not limited to:

1. Known cultural resource sites
2. Rare and endangered species sites
3. Critical wildlife habitats

B. A variance from part A of this section may be granted by the Cass County Board of Adjustment upon application and only in accordance with Minnesota Statutes, Chapter 394 as applicable. Sections 4.5 and 4.6 of the Ordinance for the Management of Shoreland Areas, Cass County, Minnesota (effective October 3, 1996) are hereby incorporated herein for the purpose of administering said variances (See Appendix B).

**Section 4.03. Judicial Review.**

The application of the additional local requirements in Section 4 of this Ordinance by the governing body is subject to judicial review in district court of Cass County in the same manner and in accordance with the same procedures applicable to judicial review of other decisions under the Cass County Environmental Service Department's official controls.

**Section 4.04. Enforcement.**

Violations of the additional local requirements in Section 4 of this Ordinance are enforceable in the same manner as other violations of the Cass County Environmental Service Department's official controls.

**Section 4.05. Review of Wetland Model and Ordinance.**

In accordance with the no net loss requirements of the Wetland Conservation Act of 1991, Laws 1991, chapter 354, as amended by Laws 1993, chapter 175; Laws 1994, chapter 627; and Laws 1996, chapter 462, and Minnesota Rules, Chapter 8420.0100, a review of the Cass County Wetland Functional Assessment Model and the Cass County Wetland Protection Ordinance shall be conducted at least every five years. The review will be conducted by an inter-agency technical team consisting of representatives from Cass County, the Department of Natural Resources, the Minnesota Pollution Control Agency, the Leech Lake Reservation Division of Resource Management, the Board of Water and Soil Resources, the U. S. Forest Service, the Natural Resources Conservation Service, Townships, and local lake associations.

If this review reveals that the no net loss goal is not being met, revision of relevant parts of the model and ordinance shall be made to bring the program into compliance with the Wetlands Act.

**ARTICLE 5 ADOPTION**

**THE COUNTY OF CASS HERE BY ORDAINS THAT:**

**THE CASS COUNTY WETLAND ORDINANCE IS HEREBY ADOPTED BY THE CASS COUNTY BOARD OF COMMISSIONERS ON THIS**

\_\_\_\_\_ Day of \_\_\_\_\_, 1997.

\_\_\_\_\_  
**Chairman, Cass County Board of Commissioners**

**ATTEST:**

\_\_\_\_\_  
**ROBERT H. YOCHUM, Cass County Administrator**

**EFFECTIVE DATE: January 1, 1998**

## **APPENDIX A--CASS COUNTY WETLAND FUNCTION ANALYSIS MODEL**

# **CASS COUNTY WETLAND FUNCTION ANALYSIS MODEL**

### **INTRODUCTION**

Cass was one of ten counties in Minnesota selected in 1995 to participate in a joint administration program (General Permit #17) with the US Army Corps of Engineers to achieve “one stop shopping” in processing of wetland-related permits. As a part of that program, the Minnesota Board of Water and Soil Resources offered counties grant funding, which Cass received, to develop methodologies which would better define wetland functions in a local setting and use that functional information to shape local wetland planning and ordinances.

In developing this model, it was recognized that:

1. The accuracy of information relating to any one wetland affects the accuracy of the model.
2. The functions of a wetland in a particular local setting or complex of wetlands may differ from the general assumptions made in developing this model.
3. No model is intended to take the place of a project-related site visit.

### **MODEL DEVELOPMENT GOALS**

A workplan was written to guide model development. The object was to create an evaluation system that could be adapted from county to county to fit local or regional wetland functional differences while meeting the WCA no net loss goal overall. The model also needed to be adaptable to varying levels of technological sophistication, depending on the availability of Geographic Information System (GIS) information in a particular county.

The following goals and action items were established in the work plan:

#### **I. Select Pilot Study Areas**

- a. Two township-sized areas to be coordinated with groundwater protection study.
- b. Assemble all existing GIS coverages for selected areas.

#### **II. Identify Evaluation Criteria and Factors**

- a. Establish general priorities according to Cowardin classification system. What are the general functions that the various wetland types serve in Cass County?

- b. Review Routine Evaluation Methodology for use in evaluating specific wetlands and/or projects. Add sensitive community, endangered species, high value wildlife, fisheries, surface and groundwater criteria.
- c. Develop menu-driven software via ArcView GIS system to assist in establishing priority ratings and replacement ratios.

### III. Test Evaluation Methodologies on Selected Pilot Study Areas

- a. Compare evaluation results to current wetland impact analysis system--more protection?
- b. Investigate groundwater recharge potential of various wetland types using Cass County Groundwater Protection Model.
- c. Refine sensitive community protection, endangered species/ high value wildlife, etc. criteria.

### IV. Develop Wetland Management Plan

- a. Draft a wetland protection policy based on WCA statute and rules and the above general and specific methodologies.
- b. Develop framework to assume administration for non-WCA permitting activities to achieve true "one stop shopping" for wetland permits.
- c. Draft language to amend Shoreland Management and County Wide Zoning Ordinances to regulate wetland impacts.

### V. Apply Analysis Models and Regulations on a County-wide Basis

- a. Seek additional grants to expand GIS coverages and analysis capability on a county-wide basis.
- b. Hold public hearings on the Wetland management Plan and proposed changes to ordinances.
- c. Adopt Plan and ordinance amendments.

## **MODEL DEVELOPMENT PROCEDURE**

The Environmental Services Department contracted with ProWest and Associates, Walker, MN., to provide GIS technical assistance and programming support. An inter-agency technical team was assembled consisting of the following representatives:

John Sumption, Wetland Act Administrator	Cass SWCD
Bob Wright, Wetland Technician	Cass SWCD
Greg Proper, Principal Partner	ProWest & Assoc.
Rose Erickson, Programmer	ProWest & Assoc.
Dale Krystosek, Board Conservationist	BWSR
Norm Moody, Land Commissioner	Cass County Land Department
Jerry Lamon, Forester	Cass County Land Department
Mike Wadman, Forester	Cass County Land Department
Larry Olson, Biologist	Cass County Land Department
Rob Naplin, Area Wildlife Manager	DNR-Section of Wildlife
Ray Norrgard, Wildlife Lake Specialist	DNR-Section of Wildlife
Harlan Fierstine, Area Fisheries Supervisor	DNR- Section of Fisheries
Norm Haukos, Large Lake Specialist	DNR- Section of Fisheries
Doug Norris, Wetland Specialist	DNR-Section of Ecological Services
Ron Morriem, Area Hydrologist	DNR-Division of Waters
Howard Christman, Area Hydrologist	DNR-Division of Waters
Kirk English, Area Hydrologist	DNR-Division of Waters
Janet Boe, Plant Ecologist	Minnesota County Biological Survey
John Jaschke, Wetland Management Specialist	BWSR
Greg Larson, Water and Land Section Admin.	BWSR
Shirley Nordrum	Leech Lake-Div. of Resource Mgmt.
Dave Kluth	Leech Lake-Div. of Resource Mgmt.
Brian Wiess	Leech Lake-Div. of Resource Mgmt.
Will Pehling, District Technician	NRCS
Leo Grabowski, Area Regulatory Specialist	U. S. Army Corps of Engineers
Mick Weburg, District Regulatory Supervisor	U. S. Army Corps of Engineers
John Alden, President	Ten Mile Lake Association
Ben Bertsch, Hydrogeology Graduate Student	University of Minnesota-Duluth

The technical team's first charge was to determine which essential elements were needed to analyze wetland basins. These elements were defined as wetland type, size, location, local hydrology, land use, soils, vegetation, adjacent land characteristics, and watershed features. Wetland functions regarding the represented disciplines were also identified: fisheries, cultural resources, wildlife, surface and groundwater quality, rare and endangered species, recreation, shoreland protection, commercial use, and flood attenuation. After considerable discussion, the team decided not to include land use values related to recreation or commercial use, but to limit the model to functional wetland attributes.

The team then broke into smaller resource specialist sub-committees and began the process of deliberating on what attributes and geophysical data would be valuable in assessing individual wetlands. The groups ranked each wetland type for their particular discipline (See Appendix 1). A score of 3 represents a high value, 2 a medium value, and 1 a low value. The following priority criteria are based on those deliberations:

Fisheries

Physically connected to protected waters  
Lake contiguous--within 200 feet of protected waters  
Lake adjacent--within the 1320 foot shoreland zone  
Outside the shoreland zone

#### Wildlife

Groupings to determine number, location, and size of wetland types  
Cowardin classes-number, amount, size  
Group on subclass field-generalize  
Group on Circular 39 classes  
Biological survey data--analyze for occurrences in similar situations

#### Rare and Endangered Species

National Heritage Database--access known occurrences of rare and endangered species  
County biological survey data from Janet Boe

#### Cultural Resources

Proximity to river and stream confluences--within 200 feet  
Proximity to lake inlets and outlets--within 500 feet  
Inflow/outflow wetlands  
Lakes greater than 40 acres in size  
Spatial inventory of known resources--SHPO, LLR, MHB, USFS

#### Surface Water Quality

Lake contiguous--within 200 feet of protected water  
Within 1320 foot shoreland zone  
Wetlands along flowages--riverine  
Wetlands adjacent to unclassified waterbodies less than 10 acres in size  
Identify trout streams and lakes

#### Groundwater Quality

Wetland position in landform assemblage (See Appendix 2)  
Soil permeability

#### Flood Attenuation

Inflow\outflow characteristics  
Adjacent flowages  
Watershed characteristics  
FEMA flood hazard classification

### **MECHANICS OF THE MODEL**

### **ACRONYM LIST**

AAT	Arc Attribute Table
Coverage	Collection of similar features.
DLG	Digital Line Graph
GIS	Geographic Information System
LMIC	Land Management Information Center
NWI	National Wetlands Inventory
PAT	Polygon Attribute Table or Point Attribute Table
SML	Simple Macro Language (used by PC ARC/INFO)
PFO	Palustrine Forested
PEM	Palustrine Emergent

The NWI quads were obtained from LMIC. SML'S created by Mike Murphy, cartographer for the U.S. Fish and Wildlife Service, were used to convert NWI DLG files into PC Arc/Info coverages. The SML's created a list of quad names, converted the DLG files to PC Arc/Info format using the DLGTOARC command, and joined the pcode, acode and xcode files to PAT, AAT and pat files. The quad coverages were tiled using political township boundary's to match the extent of the other Cass County GIS coverages. These PLS coverages were digitized from USGS 1:24,000 Quadrangles using PC/ArcInfo. A field for the new GIS acres was added and calculated based on the area field in the newly created township coverages. Other fields were added to the attribute table to store the ratings in each discipline and certain spatial parameters. If any portion of a wetland fell within a specific spatial selection, then the entire wetland got a higher rating. County, federal, state and private ownership polygons were digitized for each township. A database manager was used to produce a list of major wetland groups found in privately owned land in Cass County. This list was used for analysis by each of the represented disciplines.

### **Uniqueness**

Based on the number of occurrences of each major wetland group, the list was separated into three groups where natural breaks occurred.

### **Wildlife**

Arcview was used to determine hydrologically isolated PEM types and PFO types adjacent to rivers. These were given a value of 3 along with other types that provide critical wildlife habitat. All deep water habitats were given a value of 1. Other types selected from the list because they provide quality wildlife habitat were given a value of 2.

*Disclaimer: Wildlife habitat is dependent upon many site specific factors. Wetland type is not necessarily related to habitat quality – nearly all wetland types provide habitat for some species of wildlife. The following evaluation of habitat value of wetland types is based on factors such as relative abundance and the overall importance of wetland types for wildlife within Cass County. While these ratings may be useful as a general guide, an on-site evaluation is necessary to determine the habitat quality of a particular site.*

### **Fisheries**

Any wetland within 1320 feet of a designated Trout or Cisco Lake or Stream was given a value of 3. In addition, wetlands within 200 feet of any protected lake or river were given a value of 3. Wetlands between 200 feet and 1320 feet were given a value of 2 and all others were given a value of 1.



## Water Quality

Any Wetland within 200 ft of a protected lake or river was rated 3. Wetlands between 200 feet and 1320 feet were rated 2 and all others were rated 1.

## Rare and Endangered Species

The list of major wetland groups was rated from 1 to 3 based on a potential to support rare plant communities or where several species of rare plants have been found.

*Disclaimer: These ratings are based on the experiences of an MCBS plant ecologist in Cass County. In general, less common plant communities and those wetland communities where several species of rare plants have been found were rated 3 ( most protection).*

*It is important to keep in mind the value of site-specific survey when it comes to wetland manipulation of any sort. Although these ratings might be used to plan for the amount of effort put into evaluating a site, they should not be used to decide the fate of a wetland without an on-the-ground evaluation by a trained observer.*

## Cultural Resources

A point coverage was digitized for lake inlets/outlets occurrences along with any stream confluence.

Any wetlands within a distance of 200 feet of a confluence were rated 3. Any wetlands within 500 feet of an inlet/outlet were rated 3. Any wetlands within 200 feet of a protected lake or river were rated 3 also. All other wetlands were rated as 1.

## Flood Attenuation

All isolated basins, basins within areas zoned industrial/commercial/residential, and basins within flood prone watersheds will always receive the highest rating (**3**) regardless of water regime. Isolated basins (surrounded by uplands) are assumed to have the highest capacity to store surface water runoff since no runoff is allowed to escape. Basins located in areas zoned industrial/commercial/residential are assumed to have high value for storage because the presence or potential presence of significant amounts of impervious surfaces (no runoff detention capability) within these areas increases the value of existing wetlands. Basins in flood prone watersheds are assumed to have high value for storage because these watersheds are already at risk due to low overall capacity to store surface runoff.

For wetlands remaining unscored based on the above spatial criteria, the water regime modifier is used to rate flood attenuation as follows:

**Score 3)** Types A,C,E and J

**Score 2)** Types F,G,Z and H

**Score 1)** Types B,K and U

## Groundwater Sensitivity

All wetlands were rated according to their geologic landform position. Basins in outwash plains and other generally sandy landforms were rated 3. Basins in transitional landforms containing loams/loamy sands were rated 2. Basins in glacial till complexes containing clay loams and clays were rated 3. If a wetland was located in more than one geomorphic type, then the higher of the ratings was used. (See appendix 2 )

Scores were calculated for all wetlands and stored as a field in the attribute table.

Wetland Protection Scoresheet

Using the values and priority rankings developed by the team, the following scoresheet was developed to quantify the results for a particular wetland basin:

**RATING FACTORS**

**SCORING**

Uniqueness	HIGH VALUE	3
Fisheries Habitat Protection	MEDIUM VALUE	2
Wildlife Habitat Protection	LOW VALUE	1
Rare and Endangered Species Protection		
Cultural Resource Protection		
Surface Water Quality Protection		
Groundwater Sensitivity		
Flood Attenuation		

**REPLACEMENT RATIOS**

<b><u>SCORE</u></b>	<b><u>REPLACEMENT RATIO</u></b>	
8-11	0.5:1	
12-14	1:1	
15-17	2:1	
18-19	3:1	Technical Panel review
20-21	4:1	on scores of 18 or more
22-24	5:1	

**SPECIAL PROTECTION AREAS--TECH PANEL REVIEW**

Known cultural resource sites--In consultation with SHPO and Leech Lake Reservation  
 Rare and endangered species--Known occurrences in consultation with DNR-Ecol. Services  
 Critical wildlife habitats--Eagle nest plan areas adjacent to private land in consultation with DNR- Div. of Wildlife

**WETLAND SCORE IMPLICATIONS**

This wetland scoring system has several potential implications:

1. To adjust wetland replacement ratios up on wetlands with high functional values as a disincentive to filling or draining, or down on wetlands with low functional values, due mostly to their abundance, isolation, and/or distance from surface waters.
2. To assign general protection priorities to all wetland types.
3. To identify particular wetland basins for special protection measures (permanent easements, purchase by land trusts, etc.)
4. To serve as a technical base for local wetland planning and regulation.

**SUMMARY**

The result of this analysis identifies wetlands which are high priority for protection and those where greater jurisdictional flexibility can be exercised. It improves the efficiency of natural resource managers and saves considerable time in processing wetland applications. It also provides a basis for local wetland policy decisions.

# APPENDIX 1

## CASS COUNTY WETLAND MODEL

### FUNCTIONAL RATINGS BASED ON MAJOR WETLAND TYPES

Wetland Type	Wildlife	R & E Species	Uniqueness	Flood Water	Circular 39
LABG	2	3	3	2	5
LEMF	3	3	2	2	5
LEMG	3	3	2	2	5
LEMK	2	1	3	1	5
LOWH	1	1	1	2	5
LUBF	1	1	3	2	5
LUBG	2	1	2	2	5
LUBH	1	1	1	2	5
LUSC	2	3	3	3	4
LUSJ	2	3	3	3	4
PABF	2	3	3	2	4
PABG	2	2	3	2	5
PEM2*	3	1	*	*	*
PEMA	3	3	2	3	1
PEMB	3	3	2	1	2
PEMC	2	1	1	3	3
PEME	2	1	3	3	3
PEMF	2	2	2	2	4
PEMG	3	1	3	2	4
PEMH	2	2	3	2	4
PEMK	2	1	2	1	4
PEMU	2	1	3	1	4
PEMZ	2	1	3	2	4
PFOA	2	2	2	3	1
PFOB	2	2	1	1	7
PFOC	2	2	2	3	7
PFOE	2	2	3	3	7
PFOF	2	2	3	2	7
PFOG	2	2	3	2	7
PFO1*	2	2	*	*	*
PFO2*	2	3	*	*	*
PFO4*	2	3	*	*	*
PFO5*	2	1	*	*	*
PFO6*	2	2	*	*	*
PFO7*	2	3	*	*	*
POWF	2	2	3	2	5
POWH	2	1	3	2	5

Wetland Type	Wildlife	R & E Species	Uniqueness	Flood Water	Circular 39
POWZ	2	1	3	*	5
PSS1*	2	1	*	*	*
PSS2*	2	3	*	*	*
PSS4*	2	3	*	*	*
PSS5*	2	1	*	*	*
PSS6*	2	1	*	*	*
PSS7*	2	3	*	*	*
PSSA	2	1	3	3	6
PSSB	2	1	1	1	6
PSSC	2	1	1	3	6
PSSE	2	1	3	3	6
PSSF	2	1	2	2	6
PSSG	2	1	3	2	6
PSSH	2	1	3	2	6
PUBF	2	1	2	2	5
PUBG	2	1	2	2	5
PUBH	2	1	2	2	5
PUBK	2	1	3	1	5
PUBZ	2	1	3	2	5
REMG	3	1	3	2	**
ROWH	2	2	2	2	**
ROWZ	2	2	3	2	**
RUBF	2	1	3	2	**
RUBH	2	1	2	2	**
RUBZ	2	1	3	2	**

\*\* No Corresponding Circular 39 Type

\* Scores Vary For These Types

SPATIAL PARAMETERS	Wildlife	Fisheries	Water Quality	Cultural Resources	Flood Attenuation
PFO* types adjacent to streams	3				
PEM* types hydrologically isolated	3				3
Within 200 ft of Lake/Stream		3	3		
Within 1320 ft of Lake/Stream		2	2		
Within 1320 ft of trout/cisco lake/stream		3			
With 200 ft of river confluences				3	
Within 500 feet of inlets/outlets				3	
Adjacent to lake/stream				3	

Within 200 ft of lakes greater than  
40 acres

3

## **APPENDIX 2**

### ***GROUNDWATER SENSITIVITY RANKING***

## **APPENDIX B--BOARD OF ADJUSTMENT, VARIANCES, AND APPEALS**

### **(From the Ordinance for the Management of Shoreland Areas, Cass County, Minnesota, Effective October 3, 1996)**

**4.51 Duties of the Cass County Board of Adjustment** The Board of Adjustment is hereby established and vested with such authority as in hereinafter provided and as provided by Minnesota Statutes, Chapter 394, Laws of 1959 as amended. A Board of Adjustment consisting of five members, one of whom is a member of the Cass County Planning Advisory Commission, shall be created by resolution of the Cass County Board of Commissioners. The members of the Board may serve without compensation except that they shall be paid for necessary expenses in the conduct of the business of the Board.

**4.52 Term of Office** The Board of Adjustment members shall be appointed by the Cass County Board of Commissioners as prescribed in Minnesota Statutes 394.27, subdivision 1 through 9.

**4.53 Powers** The Board of Adjustment shall hear and decide appeals and make interpretations of the Ordinance or Zoning Map, where it is alleged there is an error in any order, requirements, decision or determination made by the Environmental Services Department in the enforcement of this Ordinance, in exercising such power, the Cass County Board of Adjustment may affirm wholly or partially, or may modify the order, requirements, decision or determination and may direct the issuance of a permit.

It may authorize, upon appeal in specific cases, a variance from the terms of the ordinance in keeping the public interest where, owing to special conditions, a literal enforcement of the provisions of this ordinance shall create undue hardship.

Shall hear and decide upon matters referred to it by the Environmental Services Department upon which it is required to pass under the Ordinance.

Shall adopt rules necessary to the conduct of its affairs, and in keeping with the provisions of this Ordinance. A Chairman and Vice-Chairman shall be elected from among the members of the Cass County Board of Adjustment. The Chairman, or in his absence, the Vice-Chairman, may administer oaths and compel the attendance of witnesses. All meetings are open to the public.

#### **4.6 VARIANCE**

**4.61 Variance Criteria.** A variance may be granted by the Cass County Board of Adjustment upon application and only in accordance with Minnesota Statutes, Chapter 394 as applicable. Any person may make an application to the Board of Adjustment for a variance from the literal provisions of the ordinance in instances where their strict enforcement would cause undue hardship because of circumstances unique to the individual property under consideration and where the hardship is of a non-economic nature. No application for a variance will be accepted from landowners or on property on which there are current or past unresolved violations outstanding. A variance may not circumvent the general purposes and intent of this ordinance. In no case shall a variance be granted which the board determines will:

A. Allow any use that is prohibited in the zoning district in which the subject property is located; or

B. Result in the placement of an artificial construction which will restrict the passage of storm flood water in such a manner as to increase the height of flooding, except obstructions approved by a Watershed District, if existing, in conjunction with sound floodplain management; or



- C. Result in incompatible land uses which would be detrimental to the protection of ground and surface water quality; or
- D. Not be in keeping with land use plans and planning objectives of Cass County or which will increase or cause danger to life or property; or
- E. Be inconsistent with the preservation of natural land forms, vegetation and wetlands of Cass County; or
- F. Result from the circumstances created by the landowner.
- G. Not be significantly amended from a previously denied application.

**4.62 Findings of Fact** Findings of Fact. The Board of Adjustment shall hear and decide upon requests for variances in accordance with the rules it has adopted for the conduct of business and pursuant to the procedures outlined in the Ordinance. In issuing a variance request, the Board of Adjustment must make the following written findings of fact upon the following considerations:

- a. the property in question cannot be put to a reasonable use if used under the conditions allowed by the official controls.
- b. the plight of the landowner is due to circumstances unique to the property not created by the landowner.
- c. the variance, if granted, will not alter the essential character of the locality.
- d. the need for the variance is not justified by economic considerations alone.
- e. for existing developments, there is a conforming sewage treatment system present for the intended use of the property.

**4.62 Records** All written reports and recommendations to the Board of Adjustment shall be made a part of the permanent written record of the Board's meeting.

When a variance is approved after the Department of Natural Resources has formally recommended denial in the hearing record, the notification of the approved variance required in Section 4.2 shall also include the Board of Adjustment's summary of the public record and testimony and the findings of fact and conclusions which supported the issuance of the variance.

**4.63 Conditions**

Conditions, as deemed appropriate by the Board of Adjustment, may be attached to enforce the general purpose and intent of this Ordinance.

**4.65 Notices** Notice of time, place and purpose of any public hearings shall be posted in the town, municipality or other areas concerned, and published in the official newspaper of the county at least ten (10) days before the hearing. Written notice of public hearings regarding the application of official controls to specific property, including but not limited to, conditional uses, variances, zoning regulations and subdivision regulations, shall be sent to all property owners of record within five hundred (500) feet of the affected property or to the ten (10) nearest properties, whichever, would provide notice to the greatest number of owners. Written notice shall also be given to the affected unincorporated areas, the affected Town Board of Supervisors, and the municipal council within two (2) miles of the affected property.

**5.0 APPEALS**

**5.1 DECISIONS**

The decision of the Cass County Board of Adjustment shall not be final. Any person having an interest affected by this Ordinance or any decision made relating to it shall have the right to appeal to District Court on question of law and fact within thirty (30) days.

## **5.2 LAPSE OF VARIANCE**

A variance must be used within one year of the date the variance or appeal (issuance of variance through appeal process) was granted. After one year, a new variance application must be made.