BECKER COUNTY BOARD OF COMMISSIONERS
Regular Meeting
Date: Tuesday, December 31, 2024 at 8:30 AM
Location: Board Room, Courthouse
or
Virtual TEAMS Meeting Option
Call-In #: 763-496-5929 - Conference I.D.: 525 962 900#

8:30 Call the Board Meeting to Order: Board Chair Okeson

1. Pledge of Allegiance

8:35 Regular Business

1. Agenda Confirmation

8:40 Consent Agenda

1. Auditor-Treasurer: Regular Claims, Auditor Warrants, and Claims over 90 Days 2
2. Human Services: Regular Claims, Public Health, & Transit
3. Auditor-Treasurer: Resolution 12-24-3B - Repurchase Parcel 49.0801.000 3
4. Environmental Services: Updates to the 2025 Tip Fee Schedule 4
5. Assessor: Abatements 6

8:45 County Administrator

1. Report

8:50 Human Resources

1. Union Contract Addendum Approval - LELS Deputies - Longevity 7

8:55 Planning & Zoning

1. Open Forum
2. Resolution 12-24-3A - Adoption of the Becker County Comprehensive Land Use Plan 8
3. Intent to enact an Amendment to the Zoning Ordinance 11
   a) Cannabis
   b) Animal Feed Lots
4. Joint Planning Board for the City of Detroit Lakes, Lake View Township and the County of Becker Update

Adjourn

BECKER COUNTY BOARD OF COMMISSIONERS
Finance Committee Meeting
Date: Monday, December 30, 2024 at 10:30 AM

Location: 1st Floor – Board Meeting Room - Courthouse
915 Lake Avenue, Detroit Lakes, MN

Administrator

1. Report

Auditor-Treasurer

1. Claims
2. Resolution 12-24-3B - Repurchase Parcel 49.0801.000
3. Claims: Human Services, Public Health & Transit

Land Use/Environmental Services

1. Updates to 2025 Tip Fee Schedule

Assessor

1. Abatements

Adjourn

RESOLUTION

BECKER COUNTY BOARD OF COMMISSIONERS

RESOLUTION NO. 12-24-3B

WHEREAS, the legal description of the property is Parcel Number 49.0801.000, described as,

Lot Twenty-Seven (27) of Block Ten (10) Cherry's Subdivision according to the plat on file and of record in the Office of the County Recorder in and for Becker County, Minnesota

WHEREAS, the property forfeited October 2, 2024, on Auditor's Certificate of Forfeiture, Document No. 011435 for 2016, 2017, 2019, and miscellaneous fees; and

WHEREAS, Jill Petree has requested an Application for Re-purchase of Forfeited Lands with the County Auditor-Treasurer; and

WHEREAS, a repurchase price of $2,357.59 will be paid in full upon approval; and

NOW, THEREFORE, BE IT RESOLVED that the Board of Commissioners of Becker County, Minnesota, hereby approves the application for Re-purchase of Tax Forfeited Lands for Parcel Number 49.0801.000.

Duly adopted this 31st day of December 2024 in Detroit Lakes, Minnesota.

COUNTY BOARD OF COMMISSIONERS
Becker County, Minnesota

ATTEST:

/s/ Carrie Smith
Carrie Smith
County Administrator

/s/ John Okeson
John Okeson
Chair

State of Minnesota)
) ss.
County of Becker)

I, the undersigned being the duly appointed and qualified County Administrator for the County of Becker, State of Minnesota, do hereby certify that the foregoing is a true and correct copy of a Resolution passed, adopted, and approved by the County Board of Commissioners at a meeting held December 31, 2024, as recorded in the record of proceedings.

_____
Carrie Smith
County Administrator

BECKER COUNTY
Land Use Department

915 Lake Avenue • Detroit Lakes, MN 56501
218-846-7201

MEMORANDUM FOR ACTION

Date: December 26, 2024

SUBJECT: Updates to the 2025 Solid Waste Fee Schedule

THROUGH: Environmental Services Committee

To: Becker County Commission

1. **Reference:** Adjustments to the 2025 Solid Waste Fee Schedule.

2. Discussion: The 2025 Solid Waste Fee Schedule has been approved by the County Board, the following changes are proposed by the Environmental Services Committee:

   a. Tires: Up to four (4) residential tires at $3.50. Additional tires at $7.00/ tire.
   b. Recyclable sheetrock (new construction scraps): $11.50/CY or $49.25/ton.
   c. Hazardous Waste Program - *Usable Paint:
      Full 5-gallon bucket: $20/bucket
      Full 1 gallon pail: $4/bucket
      Full Spray cans: $1/can
      *Based on the Hazardous Waste Coordinators discretion

   The actual tire disposal cost is approximately $7/tire. The reduced price for the first four tires is an incentive to encourage citizens to bring in waste tires but not businesses who generate many waste tires.

   Sheetrock recycling is new in 2025, this is only for waste sheetrock scraps that have not been painted or have any other materials attached or comingled with it.

   Charging for paint – this charge is to offset operational costs and to discourage people from hording paint received through the paint exchange program.

3. Funding: NA
4. Action: Board motion approving the adjustments to the 2025 Solid Waste Fee Schedule.

5. The point of contact for this memorandum is Steve.Skoog@co.becker.mn.us or by phone at 846-7310.

Distribution: County Commissioners
County Administrator

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1				Previous	Adjustment	Corrected	TAG	Twsp/City	School District	EMV	TMV	DIFFERENCE	NTC PREVIOUS	NTC CORRECTED	AMOUNT DIFF	RMV PREVIOUS	RMV CORRECTED	AMOUNT OF CHANGE
2	49.0029.103	DANIEL HOLZGROVE	DUPLICATE FOR FULL PLAT PARCEL	$566	($546 + $20 SA)	$0	4901	CITY OF DL	22-30	$57,700	$ -	$57,700	577	0	577	$ 57,700.00	$ -	$ 57,700.00

CONTRACT ADDENDUM

This Contract Addendum (the "Agreement") is effective January 1, 2025,

BETWEEN: Law Enforcement Labor Services Local #391 ("Union") represents the Deputies in the Sheriff's Department in Becker County ("Employer")

WHEREAS, the Law Enforcement Labor Services Local #391 ('Union") represents the Deputies in the Sheriff's Department in Becker County ("Employer"); and

WHEREAS, the Union and the Employer desire to amend the Contract on the terms and conditions set forth in this Contract Addendum (the "Agreement");

WHEREAS, this Agreement is the second amendment to the Contract, amending Article 24.1

NOW, THEREFORE, the Parties agree to amend their obligations in the existing Contract and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree to keep, perform and fulfill the promises, conditions and agreements below:

1. AMENDMENTS:

1.1 The Contract is amended as follows:

1.1.1 Employees hired before April 1, 2018, shall receive, in addition to the regular compensation provided herein, longevity pay which will follow the schedule below:

Years of Service	Percent of Salary Increase
0 through 5 years	0%
6 through 10 years	1%
11 through 15 years	2%
16 through 20 years	5%
21 through 25 years	7%
26 through 30 years	8%
Over 30 years	9%

2. NO OTHER CHANGES:

2.1 Except as otherwise expressly provided in this Agreement, all of the terms and conditions of the Contract remain unchanged and in full force and effect.

DEPUTY CODY BOUCHIE, UNION STEWARD	DATE	JOHN OKESON, BOARD CHAIR	DATE
DEPUTY INVESTIGATOR JASON KLAWUHN, UNION STEWARD	DATE	CARRIE SMITH, COUNTY ADMINISTRATOR	DATE
KEITH TERLINDEN, UNION BUSINESS AGENT	DATE		

BECKER COUNTY BOARD OF COMMISSIONERS

RESOLUTION 12-24-3A

A RESOLUTION ADOPTING THE BECKER COUNTY COMPREHENSIVE LAND USE PLAN

WHEREAS, Minnesota Statutes §394.231 authorizes each county to review and, if necessary, amend its comprehensive plan with recommended updates; and

WHEREAS, the County of Becker authorized the review and update of its previous Land Use Plan adopted in 2003; and

WHEREAS, the Becker County Comprehensive Land Use Plan (the "Plan") is a planning tool intended to guide the future growth and development of Becker County; and

WHEREAS, the Plan reflects input from elected officials, appointed officials, Becker County staff, city and township staff, community organizations, the public at large, and other stakeholders; and

WHEREAS, the planning process included the opportunities for the public to provide input via an online survey, interactive map, and online comment forms; and.

WHEREAS, the County Board of Commissioners held public workshops to discuss sections of the plan and review drafts on October 31, 2023, January 9, 2024, February 22, 2024, April 16, 2024, and May 21, 2024; and

WHEREAS, the County held two focus group meetings related to the environment, economic development, and agriculture on May 21, 2024 and July 31, 2024; and

WHEREAS, Becker County published the draft Plan on August 5, 2024, and gave the public an opportunity to review and comment on the plan via written comments, email and an online comment form through September 9, 2024, and

WHEREAS, Becker County Planning Commission held a public hearing on August 28, 2024 and fourteen people provided oral comments; and

WHEREAS, the Planning Commission has considered the proposed Becker County Comprehensive Plan and all public comments, and thereafter submitted its recommendations to the County Board; and

WHEREAS, Becker County received 77 comments and made changes to the Plan to address those comments; and

WHEREAS, Becker County published a revised Plan on September 24, 2024 and gave people through October 8, 2024 to review and provide additional comments in writing as well as oral comments at a second public hearing before the County Board on October 8, 2024; and

NOW THEREFORE BE IT RESOLVED. That the Board of County Commissioners of Becker County, Minnesota, approves Ordinance number 23 adopting the Becker County Comprehensive Land Use Plan.

Duly adopted this 31st day of December 2024, at Detroit Lakes, MN.

COUNTY BOARD OF COMMISSIONERS
Becker County, Minnesota

ATTEST:

/s/ Carrie Smith	/s/ John Okeson
Carrie Smith	John Okeson
County Administrator	Board Chair

State of Minnesota)
) ss
County of Becker)

I, the undersigned being the duly appointed and qualified County Administrator for the County of Becker, State of Minnesota, do hereby certify that the foregoing is a true and correct copy of a Resolution passed, adopted, and approved by the County Board of Commissioners at a meeting held December 31st, 2024, as recorded in the record of proceedings.

_____
Carrie Smith
County Administrator

Becker County
State of Minnesota
Ordinance No. 23

AN ORDINANCE ADOPTING THE BECKER COUNTY COMPREHENSIVE LAND USE PLAN

Section 1: GENERAL PROVISIONS

1.1 Authority. Minnesota Statutes §394.21 authorizes counties to carry out county planning and zoning activities; and Minnesota Statutes §394.23 authorizes the board to prepare and adopt by ordinance, a comprehensive plan.
   a. Becker County adopted its Land Use Plan update in 2003.
   b. Becker County engaged stakeholders and the public and conducted a transparent public process since October 2023 to ensure the Land Use Plan met the public's needs and expectations.

1.2 Purpose. The purpose of this ordinance is to promote the health, safety, and general welfare of the community by:
   a. Revising goals and policies as well as implementation strategies.
   b. Identifying current and future needs by incorporating data, public engagement/survey input, and the steering committee's guidance.
   c. Including and developing the Future Land Use Map and comprehensive goals with policies for land use, housing, natural resources, transportation, infrastructure, utilities, and economic development.
   d. Determining the intensities at which land can be developed, such as the types of business-related uses, the number of animal units on a farm, or the housing density.
   e. Providing a development blueprint.

Section 2: EFFECTIVE DATE

2.1 This Ordinance and the Becker County Land Use Plan shall be in effect from and after the date of its passage by the Becker County Board of Commissioners and publication according to Minnesota Statutes.

Adopted by the Becker County Board of Commissioners on December 31, 2024.

_____

John Okeson
Board Chair

Attest:

_____

Carrie Smith
County Administrator

Becker County Planning Commission
December 18th, 2024

An audio recording of the meeting is available at:
https://www.co.becker.mn.us/government/meetings/planning_zoning/planning_commission/

Members Present: Chairman Dave Blomseth, Craig Hall, Mary Seaberg, Harvey Aho, Kim Mattson, Steve Lindow, Tom Disse, Nick Bowers, Jeff Moritz, Commissioner John Okeson, and Zoning Administrator Kyle Vareberg. **Members Absent:** Tommy Ailie, Commissioner Erica Jepson, and Kohl Skalin

Chairman Dave Blomseth called the Planning Commission meeting to order at 6:00 pm. Introductions were given. Becker County Zoning Technician Nicole Bradbury recorded the minutes.

Chairman Dave Blomseth explained the protocol for the meeting and stated that the recommendation of the Planning Commission will be forwarded to the County Board of Commissioners for final action.

New Business:

1. **Intent to enact an amendment to the Zoning Ordinance.**

   The general purpose of the amendments is as follows:

   a) **To consider revisions to the Becker County Zoning Ordinance for requirements regulating cannabis and feedlots. Requirements will include, but are not limited to, size of establishment, location of establishment, setbacks, and fees.**

The proposed changes submitted before the meeting are entered below:

Recommended Amendments to the Becker County Zoning Ordinance

Proposed language is indicated by underline. Language to be removed has been "strike-throughed".

Proposal # 1.) Chapter 8, Section 17 – Cannabis, and Chapter 11, Section 2, - Definitions: To adopt requirements for the production and retail sales of cannabis.

Standards for the Cultivation, Manufacture, Wholesale, and Retail of Cannabis.

A. General Standards applying to cannabis businesses.

a. All Cannabis establishments must be permitted with Becker County prior to operation.

b. Licensing. State licensing, if applicable, is required prior to establishment of the use.

c. Nuisance. The use must not establish a nuisance in the form of noise, vibration, glare, fumes, odor, lighting, or electrical interference detectable off premise.

d. Home Occupation. Cannabis businesses are prohibited as a home occupation.

e. All establishments related to Cannabis will require a conditional use permit.

B. Performance Standards.

a. Setbacks. Cannabis businesses are subject to the following setbacks:

1. 1,000 feet from a school.
11. 500 feet from a church, daycare, library or a residence on an adjacent property.
111. 500 feet from a residential treatment facility.
1v. 500 feet from a park, playground, or athletic field.

b. Cannabis Cultivation.

i. Cultivation is subject to the following performance standards:

ii. Cultivation and Operations Plan. A business licensed or authorized to cultivate cannabis must prepare, maintain, and execute an operating plan and a cultivation plan, which must include but is not limited to:

1. Site Plan. Detailing size and layout of facility, including size and layout of the cultivation facility.
2. Security. Provisions for fencing and lighting.
3. Solid Waste. A plan to destroy all cannabis plant material and cannabis byproduct to render it unusable. Waste material must be stored in a secure location.

c. Manufacture and Wholesale.

i. Manufacture and Wholesale are subject to the following performance standards:

ii. Facility and Operations Plan. A business licensed or authorized to manufacture and wholesale cannabis and cannabis related products must prepare, maintain, and execute a facility and operations plan, which must include but is not limited to:

1. Site Plan. Detailing size and layout of facility, including size and layout of the manufacturing facility.
2. Security. Provisions for fencing and lighting.
3. Solid Waste. A plan to destroy all cannabis plant material and cannabis byproduct to render it unusable. Waste material must be stored in a secure location.

d. Retail.

i. The retail sale of cannabis and related cannabis products is subject to the following performance standards:

ii. Business and Operations Plan. A retail business licensed or authorized to sell cannabis and cannabis related products must prepare, maintain, and execute a business plan, which must include but is not limited to:

1. Hours of Operation. 8:00AM to 9:00PM Monday through Saturday and 10:00 AM to 9:00PM Sunday.
2. Site Plan. Detailing size and layout of facility, including size and layout of the retail facility.
3. Solid Waste. A plan to destroy all cannabis plant material and cannabis byproduct to render it unusable. Waste material must be stored in a secure location.

Definitions is hereby amended as follows:

Cannabis: See MN Statute 342.01.

Proposal # 2.) Chapter 11, Section 2, - Definitions, Chapter 5, Table 5-1 – Feedlots, and Chapter 6, Section 12, Letter B, number 1.- Agricultural Standards.

Animal Feedlot. "Animal feedlot" means a facility as defined in Minnesota Rules, part 7020.0300. A lot or building or combination of lots and buildings intended for the confined feeding, breeding, raising or holding of animals and specifically designed as a confinement area in which manure may accumulate or where the concentration of animals is such that a vegetative cover cannot be maintained within the enclosure. For purposes of these parts, open lots used for the feeding and rearing of poultry (poultry ranges) shall be considered to be animal feedlots. Pastures shall not be considered animal feedlots under these parts.

~~**Feedlot, agricultural.** An enclosure for feeding, breeding, raising or the holding of livestock or poultry of less than 500 animal units, or mink and other fur bearing animals in less than fifteen (15) hutches, or is incidental to a farming operation which has enough land to produce the majority of feed to feed the animals and dispose of the manure (animal wastes).~~

~~**Feedlot, commercial.** An enclosure for the feeding, breeding, raising, or holding livestock, poultry or mink and other fur bearing animals that is not an agriculture feed lot. A pasture is a feedlot when the concentration of livestock, poultry, or other animals is such that a vegetation cover is not maintained.~~

	Table 5-1 Land Use Districts															
	General Agriculture		Special Protection		Residential			High Density Residential		Water Oriented Commercial			Commercial			Industry	
Use Type	All Lakes Rivers	Non Shore land	All Lakes Rivers	Non Shoreland	GD & RD Lakes	NE Lakes & Rivers	Non Shore land	All Lakes Rivers	Non Shore land	GD & RD Lakes Rivers	NE Lakes	Non Shore land	GD & RD Lakes Rivers	NE Lakes	Non Shore land	Mg	Adm. & Whsg
A. Agricultural Uses																	

	Table 5-1 Land Use Districts																
	General Agriculture		Special Protection		Residential			High Density Residential		Water Oriented Commercial			Commercial			Industry	
Use Type	All Lakes Rivers	Non Shore land	All Lakes Rivers	Non Shore land	GD & RD Lakes	NE Lakes & Rivers	Non Shore land	All Lakes Rivers	Non Shore land	GD & RD Lakes Rivers	NE Lakes	Non Shore land	GD & RD Lakes Rivers	NE Lakes	Non Shore land	Mg	Adm. & Whsg
Agricultural building	P	P	P	P	C	C	C										
Cropland and pasture	P	P	P	P	C	C	C										
Feedlots, under 1,500 animal units ~~agricultural~~	P	P	C	C													
Feedlots, over 1,500 animal units ~~commercial~~	C	C	C	C													

B. Feedlots. Animal feedlots shall meet the following standards:

1. New feedlots with less than 1,500 animal units shall not be located in the shore~~land~~ impact zone of watercourses or in bluff impact zones and shall be at least three hundred feet (300') from the ordinary high-water level of all public waters basins. New feedlots with more than 1,500 animal units shall not be located in the shore~~land~~ impact zone of watercourses or in bluff impact zones and shall be at least five hundred ~~three hundred~~ feet (~~300'~~ 500') from the ordinary high water level of all public waters basins.

2. Modifications may be made to existing feedlots that are located within three hundred feet (300') of the ordinary high-water level or within a bluff impact zone if the modifications do not extend the feedlot closer to the ordinary high water level setback or further into the bluff impact zone.

3. A certificate of compliance, interim permit, or animal feedlot permit, when required by Minnesota Regulations, parts 7020.0100 to 7020.1900, shall be obtained by the owner or operator of an animal feedlot.

***The entirety of the Zoning Ordinance is subject to change as the amendments may affect more than one chapter or section.**

The cannabis portion was discussed first.

Roger Winter with the Becker County Township Association shared that they had developed a resolution which would delegate cannabis retail registration to the County. He said each township can decide if they wanted to sign to accept the resolution or handle it themselves as a township.

Carrie Smith, Becker County Administrator, shared information on population size and the number of cannabis businesses that will need to be allowed per state law.

There was discussion amongst the Board members regarding setbacks.

MOTION: Mattson motioned to approve the cannabis portion with the amendment to double the setbacks listed under Performance Standards. Disse second. Roll Call; Disse, Mattson, Bowers, Moritz, Blomseth, Lindow, Seaberg, and Aho in favor. Hall opposed. Motion carried.

The feedlot lot portion was discussed next.

Bill Henke spoke and shared his concerns about protecting waters and well water. He encouraged well monitoring and reparations for any damage done to well and surface water so that the burden doesn't fall on the taxpayers.

MOTION: Hall motioned to approve the feedlot portion with the addition of well monitoring where specific verbiage is worked out before the County Board meeting on December 31st, 2024, by meeting with appropriate agencies to make that determination. Bowers second. Roll Call; Disse, Mattson, Bowers, Moritz, Blomseth, Hall, Seaberg, and Aho in favor. Lindow opposed. Motion carried.

Other Business:

I) **Tentative Date for the Next Informational Meeting: January 22nd, 2025**; 8:00 am; 3rd Floor Meeting Room in the Becker County Courthouse, Detroit Lakes, MN.

Since there was no further business to come before the Board, Disse made a motion to adjourn. Aho second. All in favor. Motion carried. The meeting adjourned at 7:05 pm.

_____ _____

David Blomseth, Chairman **Jeff Moritz, Secretary**

ATTEST

_____

Kyle Vareberg, Zoning Administrator

Additional Information provided

On behalf of the Izaak Walton League

Regarding

Confined Animal Feeding Operations (CAFOs)

And

Wake Boat potential impacts

ADDRESSING AFO & CAFO IMPACTS IN BECKER COUNTY'S COMPREHENSIVE LAND USE PLAN, ZOINING MAPS & ORDINANCES

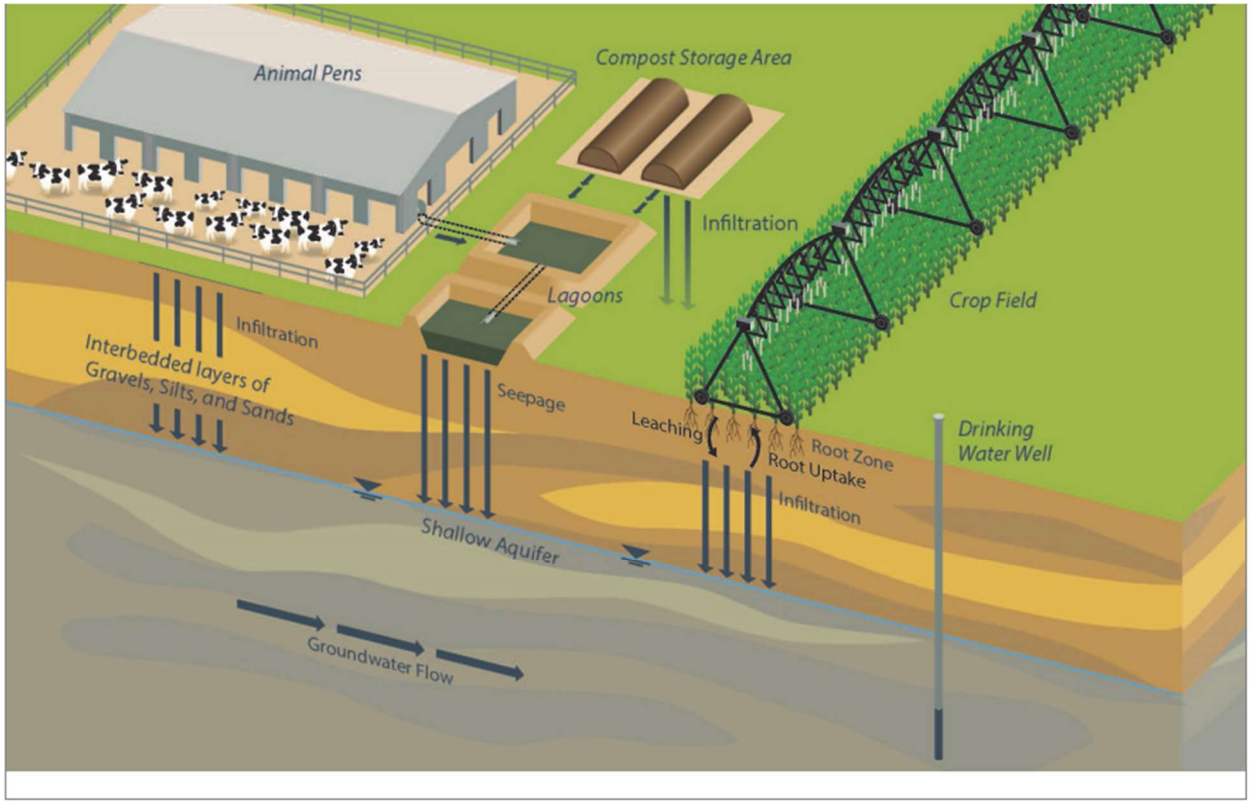
An Izaak Walton League of America

Prairie Woods Chapter Special Report

to

The Becker County Board, the County Zoning Administrator, the County Planning Commission, the Comprehensive Planning Consultants and the Public on Confined Animal Feeding Operations (CAFOs)

August 1, 2024



Filepath: \\fuji\anchor\Projects\Yakima Dairies\SDWA AOC\Deliverables\02 - Annual Reports\2017\EPA Submittal_20180301_working\02-Figures\Figure 1.pdf

Photo Credit: Anchor QEA – Anchor Project – Yakima Dairy – 2017 Report to the Environmental Protection Agency

EXECUTIVE SUMMARY

The Becker County Board's decision to use a comprehensive plan update to address CAFO and Wake Boat issues has afforded the public and non-profit organizations unique opportunities to participate and even contribute their unique resources to the effort. With County Board Chair approval, members the local Izaak Walton League's Prairie Woods Chapter offered to perform research to fill technical information gaps that neither the staff or the planning consultant could fill. Thus, written reports were prepared on CAFOs and Wake Boats.

This report explains that the trend of more CAFOs migrating north into Becker County is real. The report dispels industry claims that they handle manure responsibly, by surveying other states and region's experiences. It describes how the evolving food industry model engenders industrial-sized feeding operations to maximize their profits, but to the detriment of smaller family farms and water quality. The report discloses that all manure storage facilities leak and can significantly affect sensitive groundwater, like that found in some regions of Becker County. State and Federal rules and permits are found to be too lax because the rules allow manure to be applied excessively enough to pollute both surface and ground waters. Manure leaks and spills are directly linked to fish kills. The spills resulted from heavy rainfall causing overflow from manure pits or were associated with manure transport tank wagon or pipeline accidents or failures.

The economic impact section of the report finds evidence that disputes nearly all industry claims that communities will benefit economically from industrialization of livestock farming. CAFOs are shown to ultimately be harmful to local economies because they displace family-scale family farms, reduce the number of farm worker needed, reduce hourly pay and can actually depopulate counties where CAFOs become dominant. Decreasing property values in counties with higher numbers of CAFOs is documented while lower CAFO counties experience increased property values. And many counties have been forced to raise taxes to offset increased costs of repairs to rural roads and bridges.

Credible monitoring of existing area wells and surface waters in any area designated for CAFO introduction or expansion, both before and after the first facilities are approved, is strongly recommended to establish baseline data. Therefore, private wells in areas zoned for more

intensive animal agriculture (CAFOs) in Becker County should have base-line testing done well in advance to protect well-owners, followed by regular sampling. Other states, and counties in the S.E. corner of Minnesota having experiences with CAFO's, are reviewed through published articles and each reveal significant unresolved levels of surface and groundwater pollution attributable to large and industrial scale feedlots. State and federal rules are reviewed and found inadequate to prevent or mitigate water pollution from CAFOs.

Minnesota is under Federal (EPA) orders to improve regulations for these areas, and new rules affecting eastern Becker County have already been judged as inadequate. Clean water supplies in quantities essential to Becker county's present and future economy, and for drinking purposes, are found to be inadequately regulated or apportioned by the state's water appropriation permitting program. Proposals for water quality and quantity (well-levels) monitoring for private well-owners could be recommended in the comprehensive plan. With state and federal regulations of CAFOs found inadequate to protect the health and welfare of Becker County citizens, zoning ordinances and permit conditions are considered quite important to fill these gaps. CAFO disease control methods are linked to the growing ineffectiveness of antibiotics in humans.

Testimonials are cited as evidence that small farmers can actually get financially trapped and even punished, by the CAFO industry when they find contract demands are draining their available capitol. A host of educational resources are included in the report that the League, other civic groups, county staff and the media can use to better inform the decision-makers and the public about these issues. Some of the resources listed in the full report are shown here below.[1]

Izaak Walton League Chapter Produced Videos with CAFO experts and Citizen Testimonials at: https://drive.google.com/file/d/17fEX-Wfztuq39zN4T4uXgnFkLOzasGNf/view

Freshwater Futures' Webinar - Great Lakes HABs & CAFO Manure Conference Series | May 2, 2024 Freshwater Future
https://www.youtube.com/playlist?list=PL_JsLZuTdlRu96Q1tarJmgjsWOHEdoIYv

[11] links in black font are not active, to access these files please cut and paste the URL into your browser.

Explosion of CAFOs in Iowa and its Impact on Water Quality and Public health at:
https://roadactivist.org/wp-content/uploads/2018/01/Explosion-of-CAFOs-in-Iowa-and-Its-Impact-on-Water-Quality-and-Public-Health.pdf

Economic Realities of CAFOs – Dr. John Ikerd - University of Missouri-Columbia at:
https://ikerdj.mufaculty.umsystem.edu/presentation-papers/factory-farms-cafos/economic-realities-of-cafos

Antibiotic Use in Animal Medicine and Antibiotic Resistance.
https://www.cidrap.umn.edu/antimicrobial-stewardship/study-predicts-global-increase-antimicrobial-use-food-producing-animals

https://www.cidrap.umn.edu/antimicrobial-stewardship/report-slams-beef-industry-overuse-antibiotics

Addressing AFO & CAFO Impacts in Becker County's Comprehensive Land Use Plan, Zoning Maps & Ordinances

A Special Report to the Becker County Board, Zoning Administrator, the County Planning Commission the Comprehensive Planning Consultants and the Public on Confined Animal Feeding Operations (CAFOs)

from

The Izaak Walton League of America's Prairie Woods Chapter

Dr. Bill Henke, President
Erika Gilsdorf, Research Committee Chair
Charles Becker, Wake Boat Research Subcommittee Chair
Willis Mattison, Chief Science Advisor

August 1, 2024

Comprehensive Land Use Planning for CAFOs

Most land use decisions are inherently local. In Minnesota local governments create their own "comprehensive plan" for growth and development. The plan, in conjunction with zoning maps and ordinances establishes the way development occurs in that area. The primary purposes of the plan, zoning maps and the ordinances that implement it, is to "promote and protect the health, safety and general welfare" of the public, to "preserve and enhance the quality of surface waters" and to "provide for the wise use of water and related land resources of the County"[2]

Decisions about local planning and zoning, local utilities and other infrastructure are all made pursuant to the plan and maps. State law requires certain minimum elements in the plans, but leaves it to local units of government to develop and implement them through ordinances. The plans, maps and ordinances are ordinarily reviewed, updated and approved every 10 years.

The Becker County Public Engagement Survey used to gauge citizen priorities for the current planning effort found that 70% of Becker County citizens thought more should be done to protect the water quality of lakes and streams. When the nearly 500 respondents were asked to note their top priorities in terms of issues facing the county, 83% considered housing one of the three highest concerns. Further over 70% consider jobs and economic development a key priority and slightly more than 50% see the environment as an issue to be prioritized. Additionally,

[2] Quotes from statement of purpose section 101 in Becker County Zoning Ordinance

citizens raised two new issues to be addressed by the plan, animal feeding operations (AFOs) and confined animal feeding operations (CAFOs).

A county's land-use decisions about these livestock and poultry operations can have significant effects on the county's water quality, natural resources and human health, and economy, but impacts vary widely depending on sizes and locations of the operations. Factors such as soil types, depth to groundwater, topography and proximity to surface waters, proximity to neighbors, and compatibility of activities are important to consider along with the cumulative impacts of all other land uses on valued natural, cultural and aesthetic resources. Highly sensitive water bodies may need special protections and waters already impaired may need remedial measures in a land use plan. The impact of a single livestock or poultry project may seem small, but when we look at the bigger picture, the challenges to the environment and human health from both the small and industrial scale agriculture projects added together can be dramatic.

The livestock industry has experienced increasingly adverse conditions attributable to over-crowding; too many large facilities in close proximity, increasing animal disease risks, depletion of available clean water supplies, saturation of available crop lands with manure, and growing community animosity stemming from nuisance odor, traffic and insect (fly) populations.

Because industrial scale livestock agriculture is a recent arrival in Becker County the current comprehensive plan update is particularly well timed to perform its purpose serving to protect the county's water quality, natural resources and human health, as well as its economy.

The information provided here will serve to inform the County Board, the Planning Commission, County Planning and Zoning staff, and the public, on the consequences of allowing industrial scale animal feeding operations to first become established and then to possibly expand in Becker County. Potential impacts and risks to the public health and welfare of its current and future residents are identified. Factors that may potentially degrade the value of the county's natural resources and potential threats to the vitality of the County's rural economy are described in detail.

Filling the AFO/CAFO Information Gap

Conventional wisdom expressed in recent deliberations about these divisions of government responsibility for livestock facilities, led Becker County officials to defer to state and federal laws, permits and standards, to protect surface and ground water, as well as look after the general welfare and economic well-being of the county's citizens. The reliance on other entities to fill this role was examined for this report and was determined, at least in part, to be misplaced. And it was determined that neither the county zoning staff nor planning commission members had the assignment and neither had the time or resources to fully research the laws or the literature on large confined feeding operations. Zoning staff stated that no one had alerted them to issues relating to these operations and invited the public's assist in gathering more information.

Furthermore, the county planning a zoning staff found they did not have the necessary capacity or resources to research the impacts of, or find solutions to, either the industrial scale feedlot or the wake boat issues. And, the needed research was determined to be beyond the scope of work the consultants could be authorized to do for the money available.

When alerted to the need, the local IWLA chapter members met with county officials offering the League's wealth of expertise and volunteer time to research the controversial issues and generate fact-based reports and recommendations for inclusion in the draft comprehensive plan before the final plan was published.

The Izaak Walton League of America (IWLA) is well positioned to perform this public service. The League is a nation-wide, grassroots conservation organization that just celebrated its 100-year anniversary in 2022. Chapter membership includes conservation, natural resource, medical, pollution control, scientific research professionals, and other volunteers, many who are current, retired or former natural resource agency, university or consulting firm employees. Others are skilled, self-taught citizen scientists.

The local ILWA Prairie Woods Chapter, established in the 1940's has a long-standing collaborative relationship with area communities in a variety of conservation matters. Most recently, chapter members worked cooperatively with the Becker County Board the "Save the Trees Coalition" and other citizens to prevent unnecessary tree removals in the Smoky Hills

State Forest along the Lake Country Scenic Byway. The successes realized from these and other collaborations helped build the County Board's, the staff's and the public's trust in the IWLA member's scientific credibility and civic-mindedness.

The Izaak Walton League's Prairie Woods Chapter located in Detroit Lakes, the Becker County seat, has offered to help fill information gaps for both the livestock feedlot issue and for wake boats as well. This report will address the livestock feedlot issues while a separate companion report will similarly address wake boats.

CAFOs Are Migrating North Into the Lakes Region– Why?

New industrial scale feeding operations have been migrating north from Iowa and southern Minnesota, into northwestern Minnesota, in order to reduce animal disease risks, and have access to more clean water. In Iowa, an analysis by the Environmental Work Group produced a report that stated in part:

> *"The number of large concentrated animal feeding operations, or large CAFOs, in Iowa increased nearly fivefold in the past two decades, a new study from Environmental Working Group (EWG) reveals, with almost all of the growth from big hog-feeding operations.*
>
> *EWG found that in 1990, Iowa had 789 large CAFOs – those housing 1,000 or more animal units – swelling to 3,963 in 2019. The findings are supported by the federal Census of Agriculture, which reported that Iowa, the top hog-producing state, housed more than 22.7 million hogs in 2017, an increase of 8.5 million since 1992.*
>
> *Swine and other livestock raised in Iowa's large CAFOs now produce 68 billion pounds of manure a year – conservatively, 68 times the total amount of fecal waste produced each year by the state's 3.15 million residents.*
>
> *Large hog CAFOs house a minimum of 2,500 pigs each, and the largest hog CAFO in Iowa houses 24,000 animals. In total, more than 60 percent of the animal waste produced*

by the largest CAFOs in Iowa comes from hogs. The mountains of animal waste produced by these facilities pose a serious and growing threat to human health, the environment and water resources in the state.

EWG used satellite and aerial imagery to pinpoint where and when the new large CAFOs appeared in Iowa. The interactive map (found at the link in footnote 2) below shows their locations, the type of facility, the animals housed there and the growth in facilities over the past two decades.[3]

Industry Claims That They Handle Manure Responsibly Examined

Industrial farming representatives often claim farmers don't contribute to water nitrate or phosphorus pollution by over-applying fertilizers or manure because these materials cost too much, and to do so would be wasteful. However, Jeff Mitchell, Laboratory Supervisor for the Des Moines Iowa Water Works has found ever increasing concentrations of nitrates in the Des Moines and Racoon Rivers, primary sources of the city's drinking water over the past 50 years. In an August, 2023 webinar entitled "*Nitrate in Drinking Water – Public and Private*" to the Izaak Walton League, Michell presented nitrate concentration trends for the Raccoon River from 1972-2023, shown in the graph below that was included in the presentation. By multiplying river concentrations, by river flow volumes, Michell calculated the total amount of nitrogen flowing past the city in 2018. If applied as anhydrous ammonia, it would have cost $10 million and could have fertilized 400,000 acres, over 20% of the watershed. Since 1974, he calculated that 1.8 billion pounds of nitrogen had flowed past the city in the river. Using similar calculations Mitchell demonstrated that in 2015, 116,000,000 pounds of nitrogen was lost to the river at a cost of $35,000,000, and as fertilizer it would have adequately treated (fertilized) 800,000 acres (40% of the watershed).[4]

[3] EWG Study and Mapping Show Large CAFOs in Iowa Up Fivefold Since 1990 – See interactive map at: https://www.ewg.org/interactive-maps/2020-iowa-cafos/

[4] Jeff Mitchell – 2023 Izaak Walton League Clean Water Webinar Series *"Nitrate in Drinking Water: Public and Private"* at: https://www.youtube.com/watch?v=OpSnuGti2k0

These data and calculations clearly show that farmers do over-apply both commercial and manure fertilizers at a great economic loss to the farmers themselves, and at great expense to municipal water suppliers such as Des Moines to remove that fertilizer. Nitrate removal has cost the city over $317,000 in 2016 and over $750,000 in 2015.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of Days in Operation	76	28	177	65	24	3	9	-	-	20
Number of Vessels Operated	313	96	726	265	72	9	58	-	-	70
Marginal Cost Per Vessel	$1,015	$1,015	$1,038	$1,159	$1,045	$1,090	$1,199	$1,199	$1,199	$1,199
Marginal Cost to Operate Facility	$317,695	$97,440	$753,588	$307,135	$75,240	$9,810	$69,542	$0	$0	$83,930

Public water supplies must meet drinking water standards (10 ppm), are routinely tested, and as shown above, treatment can be effective when the nitrate contamination is found to exceed safe levels, but it is expensive.

On the other hand, private well owners in rural areas lack testing or are tested only at the owner's expense, no standards are being enforced, and well-owners are "on their own" when contamination comes from their neighbor's activities. More information on private well contamination and aquifer draw-down issues can be found in the sections that follow.

All Manure Pits and Lagoons Leak

In Wisconsin and other states, including Minnesota, manure pits and lagoons are designed and allowed to leak, under provisions of regulatory permits, with a leak rate limit of less than 500 gallons/acre/day. This means that a three-acre lagoon is allowed to leak 1,500 gallons per day

and could total over one half-million gallons per year into the groundwater below. This has the potential to cause major problems for rural well owners.

A USDA study in Wisconsin examined this problem and found that not only nitrates were reaching private drinking water wells, but that fecal coliform bacteria from the manure pits were traveling over three miles from the source. (more on Wisconsin's experience issue later in this report)

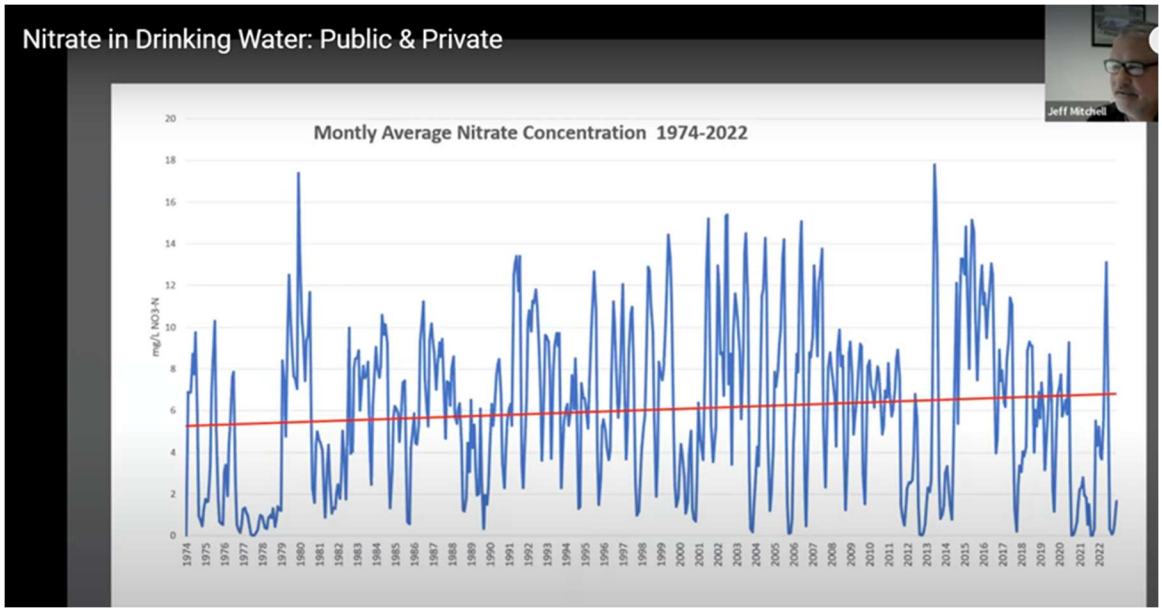
The Minnesota Pollution Control Agency's construction standards for manure pits and lagoons are "theoretical" rather than practical. This means that if construction standards are followed, the pits should theoretically not leak more than the amount allowed, but the owner/builder need not demonstrate that they are not leaking in excess of the standard. Pits and lagoons are allowed to leak slightly less than 500 gal/acre/day leakage, but the standard is generally understood to be 500 gal/acre/day.

> *"Minn. R 7020 requires that non-concrete liners for LMSAs be designed to achieve a theoretical seepage rate of no more than 1/56 of an inch per day. The required seepage standard is routinely considered to be approximately 500 gal/acre/day; however, this is slightly more than the actual 485 gal/acre/day allowed by the rule. Long-term protective and maintenance measures are required to meet this limit throughout the life of the structure."*[5]

This maximum leak-rate standard applies to manure storage facilities no matter what kind of liner is provided, including concrete, clay, Geotech (bentonite) or petroleum (plastic) liners.

It is important to note that while the MPCA rule requires this leak rate be maintained throughout the life of the pit or lagoon, and maintenance aimed at preventing greater leaking is required, there are no requirements for monitoring and actually demonstrating that the structures are not leaking more than this rate at the time of construction or after years of use and system deterioration.

[5] **Liquid Manure Storage Areas MPCA guidelines for design, construction, and operation of all types of liquid manure storage areas** – p 30 of 60, found at: https://www.pca.state.mn.us/sites/default/files/wq-f8-04.pdf



As part of the same Izaak Walton League webinar, Jesse Campbell, the Private Well Coordinator for the Midwest Assistance Program, shared information the Iowa Environmental Council had gathered about the presence of nitrate in groundwater and the challenges faced by private well users in avoiding nitrate contamination. In a 2019 Water and Land News report, Campbell revealed that “more than 6,600 private wells (12% of those tested) had nitrate averages at or above the EPA’s legal limit (10 ppm) for drinking water systems and more that 12,330 wells (22%) had nitrate levels at or above 5 ppm. Natural background nitrate levels in Iowa groundwaters are generally less than 1 ppm.

Becker County, like most other rural counties, does not have private well protection strategies in place via policy or ordinances, other than well setbacks from on-site sewer systems. And private well-owners seldom, if ever, have their wells tested to see if drinking water standards are being met. If a neighbor’s feed lot or CAFO should contaminate a private well, the well-owner has little recourse and will have the choices of either continuing to drink the contaminated water, purchase bottled water or drill a deeper well. In-home reverse osmosis treatment systems are effective at removing nitrates as well and may be more affordable than a new well. However, reverse osmosis technology is not designed to remove bacteria and viruses. If bacteria enter these systems, it can continually grow in pre-filters and deteriorate the osmotic membrane over time. Thus, most reverse osmosis system manufacturers specify that the system "must be used with biologically safe water".

Economic Impact of CAFOs on Rural Communities

Dr. John Ikerd[6], who holds a PhD in Agricultural Economics, now retired from University of Missouri-Columbia, in a Freshwater Futures May 15, 2024 webinar presentation entitled *"Economic Fallacies of CAFOs*[7]*,* presented the following conclusions from multiple peer reviewed studies[8]:

- 2008 Review: Reams of research dating to the 1940's shows local economies suffer economically and socially from industrial agriculture;
- 2001 Study: Many CAFO counties are forced to raise taxes to offset increased costs of repairs to rural roads and bridges;
- 2008 Study: Lower income, greater income inequality, more poverty, less active "Main Street", fewer stores, and less retail trade are found in CAFO counties;
- 2015 Study: Property values up to 7 miles from CAFO were lowered from 3.1% to 26%; while property values next to CAFOs were down 88%;
- 2022 Study: Personal incomes dropped 8% from 1982 to 2017 in Iowa counties with most CAFOs. Other rural counties with fewer CAFOs rose 41%.

Dr. Ikerd, in his own paper entitled: *Economic Realities of CAFOs*[9] draws the same conclusions and more. He includes an extensive list of reference publications that support his findings in his paper. Below are some excerpts from that paper on rural community impacts:

> *"Defenders claim that regardless of the need for CAFOs to meet the needs of consumers, CAFOs are necessary for the economic survival of many farming communities. They point specifically to community economic benefits from local investments in CAFOs,*

[6] Dr. John Ikerd - University of Missouri-Columbia, in a Freshwater Futures May 15, 2024 webinar presentation entitled *"Economic Fallacies of CAFOs*

[7] **Freshwater Futures' Great Lakes HABs & CAFO Manure Conference Series,** May 9, 2023. YouTube Recordings from the Conference can be found at: https://www.youtube.com/playlist?list=PL_JsLZuTdlRu96Q1tarJmgjsWOHEdoIYv

[8] The many studies referenced by Dr. Ikerd will be made available to all who want to read them upon request.

[9] *Economic Realities of CAFOs- Dr. John Ikerd, May, 2020 at:* https://ikerdj.mufaculty.umsystem.edu/presentation-papers/factory-farms-cafos/economic-realities-of-cafos

local sales of animals and animal products, and local employment in CAFOs and related local industries. However, decades of socioeconomic research and actual experience in CAFO communities reveal something very different. Whatever CAFOs contribute to local tax bases is more than offset by increased costs of maintaining rural roads and bridges that were not built to accommodate the heavy truck traffic associated with CAFOs. Also, local CAFOs operators typically source construction materials and labor from outside their local communities. Feeder animals, feed, and other supplies are shipped in from elsewhere. Even animal health care is typically provided by corporate veterinarians. Few of the economic benefits from CAFOs remain in local communities.

The most frequent claim for community benefits is probably that CAFOs will increase local employment, which is sorely needed in many farming communities. However, the economic reality is that CAFOs employ far fewer people per dollar invested or unit of production than do the independent family farms they inevitably displace. The first research I personally did on this subject was an evaluation of CAFOs as a rural economic development strategy. I evaluated the employment implications of PSF's planned operation in north Missouri. My conclusion was that if PSF came into Missouri, their CAFOs would displace up to three independent Missouri hog farmers for every job they created.[26] CAFOs came to Missouri, and Missouri lost more than 90% of its independent hog producers. I doubt that the number of workers employed in CAFOs in Missouri exceeds more than one-third of the independent hog farmers they displaced.

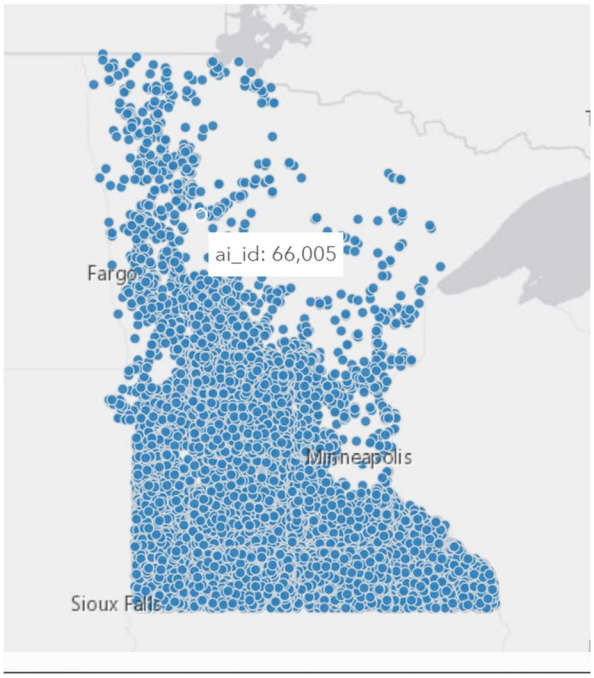
In the case of CAFOs, once livestock and poultry production became specialized, previously diversified family farms became specialized producers of either livestock or crops. Livestock and poultry were major sources of farm income that had made many diversified family farms economically viable. So, farmers who specialized in grain production were forced to farm more acres of land than before to maintain adequate family incomes. Larger crop and livestock operations meant fewer economic opportunities for farmers. With the industrialization of agriculture, the percentage of the U.S. labor force employed in agriculture dropped from 4.4% in 1970[27] to less than 1.5% in recent years.[28] Even in the communities where they locate, CAFOs do not actually

create jobs. They simply relocate and concentrate fewer lower-paying jobs in CAFO communities than had previously existed on family farms elsewhere.

In addition, this loss of farm families cannot be offset by people moving into rural communities from elsewhere. No one really wants to move to a CAFO community. A 2015 study reviewed thousands of assessed property values for residences located up to 7 miles distant from CAFOs. The review concluded: "Overall, the new studies confirm the [negative] valuation impacts reported in earlier studies, as they range from 3.1% to 26% losses depending on multiple factors, and that properties immediately abutting an AO [CAFO] can be diminished as much as 88%." [29] It takes people, not just production, to support rural communities. It takes people not only to buy farm supplies and equipment but also to shop on Main Street for cars, clothes, shoes, and haircuts. It takes people to send their kids to local schools, to attend local churches, and to serve on volunteer fire departments and local town councils. When independent family farmers are displaced by CAFOs, it's not just a matter of losing employment; it's a matter of losing the essence of what it takes to be a viable rural community."

The map below depicts the northerly progression of large confined animal feeding operations AFOs into Minnesota now stretching to the far northwestern corner of the state. [10]

[10] Source: MPCA on-line, data may not be current: https://hub.arcgis.com/datasets/mpca::feedlots-2/explore?layer=3&location=45.932764%2C-92.791165%2C6.00



These realities highlight the importance and necessity of using local land use plans and ordinances for proper siting, inspection and monitoring of large livestock facilities, so the public can have greater confidence local economies will thrive and that pollutants are not and will not enter surface or groundwaters without detection. Becker County has set an important protective precedent by requiring water sampling for large feedlots needing conditional use permits. But the design for the water sampling regime requested lacked science-based specificity and thus did not include sufficient sophistication to assure the monitoring would accomplish the intended purpose of detecting pollution and in turn, protecting surface and groundwater.

Industrialized Food System Engenders CAFOs.

Eric Schlosser in his recent book, *Barons – Money, Power, and the Corruption of America's Food Industry* states:

> *"Over the last 250 years, almost every sector of the American economy has become dominated by a handful of corporations. The forces that drove that trend have also come together to transform the most important sector of the American economy: the food system. The way in which the United States produces and distributes is food has a profound effect on worker rights, animal welfare, air quality, water quality, the landscape, rural communities, public health, international trade, and the global climate.*

Livestock and poultry DNA are now owned, manipulated and sold to American farmers by a handful of corporations. Four companies control 66 percent of the hog genetics; three companies control 95 percent of the broiler chicken genetics; two companies control 99 percent of turkey genetics.[11]

Iowa Select Farms employes more than 7,400 people, including contractors, and brings about five million pigs to market annually. Since Iowa Select was founded in 1992, the states pig population has increased more than 50 percent while the number of hog farms has declined by over 80%. Pigs now outnumber human residents by a ratio of more than seven to one, and they produce a volume of manure equivalent to the waste of nearly eighty-four million people, more than the populations of California, Texas and Illinois combined.[12] *One expert estimated that each confinement facility produces "the same amount of waste as a city of 90,000 to 150,000 people," spread over 640 acres with no sewage system."*[13]

State and federal laws do regulate some environmental impacts of livestock operations, but other than prohibiting siting in flood plains and wetlands, these regulations do little else to control the location of this particular agricultural land use. Recent findings by the Environmental Protection Agency show that Minnesota's regulations are inadequate to protect surface and groundwaters from nitrate pollution (more details on these findings are found later in this report).

Therefore, local governments have an important role to play in the proper siting of industrial scale livestock facilities in Minnesota. And, this local government role takes on new importance now that the State and federal government's protective network has not only been found to be incomplete, but has been shown to be ineffective as well. This means that local governments must exercise their authority and responsibility for deciding if and where large livestock facilities are located in their county, in order to close this loophole in the state and federal regulatory structure.

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[11] From forward by Eric Schlosser in **Barons – Money, Power, and the Corruption of America's Food Industry –** by Austin Frederick-Island Press 2024

[12] CNBC Interview with Warren Buffet, Feb 27, 2017 quoted in "BARONS" by Fredrick – See footnote #11 above

[13] Natalie Gagliordi, "Walmart CEO outlines Omnichannel Retail Strategy to Stakeholder Associates", SDNET, June 5, 2015 as cited in BARONS by Fredrick – See footnote #11 above.

How the Clean Water Act and U.S. Farm Bill Remedies Fail to Protect Water

Under the Federal Clean Water Act, *direct* discharges of manure to surface waters from livestock holding pits and lagoons is prohibited for large Confined Animal Feeding Operations (CAFOs are over 1000 animal units). However, the controls for on-land spreading of manure from both larger CAFOs or smaller AFOs (animal feeding operations under 1000 animal units) for disposal or as fertilizer are strictly voluntary. Furthermore, penalties for discharging manure, even when it kills fish, are small, and therefore have not served as an effective deterrent; spills, leaks and ruptures continue to occur in every state that has these facilities.

Manure management plans, whether for CAFOs or AFOs, generally adopt what is known as best management practices (BMPs) for manure spreading, based on so-called "agronomic rates" of application. Such agronomic rates are designed to maximize the crop growth that is nurtured by manure application. Because these rates are designed to maximize crop production alone, it becomes clear that they are not designed for surface or groundwater quality protection. These BMPs have time and time again, been demonstrated to be ineffective, not only in Minnesota, but in a number of states and watersheds around the country.

Once surface and groundwaters are degraded by concentrated livestock feeding operations (or other source, for that matter) little can be done to reverse these impacts. Given the Becker County's location in the heart of the lake country's tourism region, degraded surface water quality has potential significant adverse economic consequences. Therefore, Becker County officials can benefit greatly from the experience of other states and regions, by insisting on more effective pollution prevention measures for feedlots in the comprehensive planning process. Chapter members are aware of other proven measures and are prepared to do further research to identify more effective pollution prevention strategies if county officials indicated their interest.

The chapter has researched other regions of Minnesota and several other states, to gather the experience of others with industrial scale agriculture, beginning with the Chesapeake Bay.

Chesapeake Bay

Over forty years ago, Chesapeake Bay watchers and state officials noticed significant water quality and aquatic life deterioration. Chesapeake Bay's watershed drains part of six states so an umbrella foundation was formed to fund and coordinate point and non-point pollution remedies. In 2004, studies investigating severely degraded water in the bay revealed the primary causes were increased nitrogen and phosphorus from several sources, but mainly from agriculture, and especially from intensive livestock agriculture. A 2004 Report by the Chesapeake Bay Foundation stated:

> *"The Chesapeake Bay is choking on nutrient pollution from a myriad of sources – from urban runoff, industry, automobiles, and human sewage, but the largest source is agriculture and, increasingly, from the manure produced by livestock, which now outnumber the watershed's human population by 11 to 1. Most of that manure is spread on the surface of nearby cropland, and studies show that within two years as much as half of its nutrient pollution washes out of the soil and into rivers and streams or seeps into groundwater. Both of these pathways lead to pollution in local waterways and, ultimately, in the Bay.*
>
> *"Of the nitrogen and phosphorus that reach the Bay, agriculture is the largest source and animal manure is the largest agricultural component. Chemical fertilizers and airborne pollutants such as ammonia gas—a common manure by-product – make up the rest of the agricultural sources. This makes animal manure not only the largest source of nitrogen and phosphorus deposited on the land, but also the second largest source that reaches the Bay, behind sewage, which is deposited directly into the water. Animal manure is a major source of the Bay's pollution and must be addressed swiftly and comprehensively.[14]"*

After the 40 years of intensive, watershed wide efforts to restore water quality from this severe degradation caused by non-point pollution, the Chesapeake Bay is barely holding its own,

[14] **Manure's Impact on Rivers, Streams and the Chesapeake Bay- Keeping Manure Out of the Water, A Report by the Chesapeake Bay Foundation** July 28, 2004 at: https://www.cbf.org/document-library/cbf-reports/0723manurereport_noembargo_7567.pdf

because crop and farm animal sources of nutrients have proven difficult if not impossible to cure. A 2024 Chesapeake Bay Foundation report[15] (that is well worth reading) states:

> *"Controlling agricultural runoff, the largest source of nutrients, has turned out to be more complex. Significant regionwide reductions have proven difficult. Data suggest, though, that efforts over the last 15 years have held the line, despite increases in crop production and growing numbers of chickens and other farm animals."*
>
> *Now, as the Bay Program celebrates its 40th anniversary, its partners are contemplating what comes after 2025, the deadline for meeting most of the 31 outcomes set in its 2014 agreement. Of those, 15 are on track, 10 are off-course and the status of four others is unclear. Nutrient goals will be missed by a large margin."*

Maumee River in Ohio and Western Lake Erie in Michigan

Lake Erie water quality improved greatly in the 1980s-90s when point sources of nutrient pollution were mostly remedied by the Clean Water Act. However, recent expansion of intensive crop and animal agriculture (factory farms) have reversed these gains, and frequent toxic algae blooms have once-again become the norm. A recent joint report by the Environmental Working Group and the Environmental Law and Policy Center states:

> *"The Maumee River, overloaded with fertilizer and manure, is the single largest source of the phosphorus that triggers blooms of toxic algae in Lake Erie. Over half of the manure in the Maumee River watershed comes from an exploding number of unregulated factory farms, a new EWG and Environmental Law & Policy Center investigation reveals.*
>
> *Outbreaks of toxic algae, fueled by pollution from manure and fertilizer from farm fields, are increasing in frequency and severity across the U.S. In 2014, a toxic bloom in Lake*

[15] **After 40 years, Chesapeake Bay Program Yields Mixed Results** – Bay Journal at: https://www.bayjournal.com/news/pollution/after-40-years-chesapeake-bay-program-yields-mixed-results/article_4af88180-92b0-11ee-9d06-ab0f3bb0d72f.html

Erie imperiled the drinking water of 500,000 residents in Toledo, Ohio. The Lake Erie outbreak, now an annual event, is getting much worse.[16]

Tim Boring, a sixth-generation farmer and Director of Michigan's Department of Agriculture and Rural Development, has bad news about Michigan's efforts to curb the farm pollution that fuels Lake Erie's toxic green algae. He finds that farm programs designed to protect water quality aren't working and that "factory-sized megafarms" are detrimental to the traditional farm economy.[17]

Lake Erie's phosphorus pollution problems have grown worse amid decades of consolidation in farm country. Diverse family farms have been steadily gobbled up by massive operations that primarily grow either cattle feed such as corn, or cows — and not on the same piece of land. The corn grown on one megafarm is shipped to a separate factory-sized livestock operation, which produces huge amounts of manure yet lacks the cropland on which cow poop becomes a valuable fertilizer.

The corn farm, in contrast, has plenty of acreage but no cows to fertilize it. So the farmer resorts to chemical fertilizers.

"It's not the problem that we have too much manure, it's that we have manure in all the wrong places," Boring said. Boring sees the state playing a bigger role in protecting small farms, which tend to grow more diverse crops while also raising livestock, and helping them succeed without expanding their acreage.

In doing so, he said, Michigan can bolster rural communities that rely on farming and food processing jobs.

Freshwater Futures based in Petroskey, Michigan recently hosted a day-long conference on CAFO manure impacts on surface and groundwater, and especially their contributions to harmful algae blooms (HABs) on Western Lake Erie. The conference was recorded and featured technical experts in all fields of concern, an attorney, a local politician, a pollution control engineer, and others. The recording of individual speakers and their PowerPoint slides can be

[16] **Explosion of Unregulated Factory Farms in Maumee Watershed Fuels Lake Erie's Toxic Blooms** at: https://www.ewg.org/interactive-maps/2019_maumee/

[17] Michigan farm czar: Our fight against Lake Erie pollution isn't working: https://www.bridgemi.com/michigan-environment-watch/michigan-farm-czar-our-fight-against-lake-erie-pollution-isnt-working

accessed at the links below. These programs would be well suited for viewing by Becker County elected officials, the Zoning Commissioners, and the public. The Izaak Walton League is prepared to co-sponsor a screening of these conference recordings, and possibly invite selected presenters to visit Becker County to explain their knowledge and first-had experience in their fields of specialty.

Great Lakes HABs & CAFO Manure Conference Series.[18]

- Great Lakes HABs & CAFO Manure Conference Recording
- Speaker Presentations - Power Point Slides

For additional questions and concerns on the conference information on how to contact speakers please contact Sandy Bihn (sandylakeerie@aol.com) or Alexis Smith (alexis@freshwaterfuture.org) Jill M. Ryan, Executive Director, Freshwater Futures.

GREEN BAY WISCONSIN – ON LAKE MICHIGAN

The Green Bay Press Gazette[19] carried this headline after covering the *Midwest Manure Summit* in Green Bay in 2019:

> *"Scientists are one step closer to understanding how dangerous contaminants from fecal matter are entering private wells in Kewaunee County. New research by U.S. Department of Agriculture microbiologist Mark Borchardt shows nitrate and coliform in the water mostly comes from agriculture — and not human waste.*

[18] See links to YouTube video recordings at the end of this report. This webinar, while useful to disclose the wide variety of environment, human health and economic problems with CAFOs may not be suitable for comp plan content. It may be better suited for a series of public education events for the Becker County Board, Planning Commission members and the public. Citizens, once well informed on CAFOs by these means can build fact-based support for the County's leaders taking appropriate actions.

[19] Green Bay Press Gazette, March 2019 by Sarah Whites-Koditschek and Coburn Dukehart -Wisconsin Public Radio and Wisconsin Center for Investigative Journalism found on line at;
https://www.greenbaypressgazette.com/story/news/investigations/2019/03/04/tainted-kewaunee-county-drinking-water-wells-tied-manure-pits/3054018002/

"Where we see the strong relationships, the strong linkages, those are with agricultural factors. So that would suggest that agriculture is primarily responsible for those two contaminants," he said in an interview.

Borchardt presented his updated findings on the risk factors associated with contamination in wells at the Midwest Manure Summit in Green Bay on Wednesday. In 2017, his research found over 60 percent of wells sampled in Kewaunee County were contaminated with fecal microbes, which can come from both septic systems or animal waste.

The new study aims to understand the precise sources of contamination and how certain factors can reduce or increase the risk of tainted drinking water. Borchardt used models to predict how those factors — like the distance of a well from a manure lagoon or agricultural field, weather and the quality of well construction — can impact contamination levels.

Borchardt's study found that the No. 1 risk factor for contamination was the proximity of a well to a manure storage pit. Borchardt said the closest well in the study was 150 feet from a manure pit, but even wells three miles away still have some risk of being contaminated with coliform."

Identifying and notifying owners of private (and public) wells within a 3-to-4-mile radius of any proposed industrial-scale feedlot may be an important public health function for consideration in Becker County's planning process for these facilities. And zoning maps that are updated to depict where large or industrial scale feedlots can be allowed by standard permit or conditional use permits could be used as a guide for a county-sponsored and targeted private-well monitoring program.

EPA Intervenes to Protect Southeast Minnesota's Ground and Surface Water – Orders Permit and Guideline Improvements

In April, 2023, citizens petitioned the U.S. Environmental Protection Agency, saying nitrate in the groundwater in southeast Minnesota's karst region — largely from fertilizer and manure applied to crop land — poses an imminent danger to human health. They asked the Federal Environmental Protection Agency (EPA) to use its emergency authority under the Safe Drinking Water Act to intervene. [20]

In response to the citizen's petition, in an August 2023 letter to four Minnesota State agencies, the EPA stated that the MPCA's permit and manure management requirements for CAFOs were inadequate and needed to be "more protective" of sensitive groundwater resources. The federal agency says state agencies need to take additional steps to protect drinking water in southeast Minnesota from nitrate contamination.

> *"While this letter is largely focused on addressing immediate health concerns regarding nitrate contamination in drinking water in the Karst Region, Minnesota must also develop and implement a long-term solution to achieve reductions in nitrate concentrations in drinking water supplies. Developing a complete understanding of potential sources of nitrate contamination is an important immediate step for the state. A risk analysis of current and future nitrate contamination of the impacted groundwater will be critical for determining long-term solutions, and such analysis should incorporate the latest science and technologies. Minnesota has tools to effect reductions in nitrate concentrations through the National Pollutant Discharge Elimination System (NPDES) and State Disposal System permit programs, including development and implementation of more protective NPDES/SDS CAFO permits. In addition, Minnesota should consider adopting monitoring requirements in NPDES/SDS permits related to (1) subsurface discharges from manure, litter, and process wastewater storage, as well as (2) discharges from land application, similar to those proposed by EPA as modifications to* the EPA-issued CAFO general permit for Idaho: https://www.epa.gov/npdes-*permits/npdes-general-permitconcentrated-animal-feeding-operations-cafos-idaho.*

[20] EPA says 'further actions' needed to protect human health from nitrate in southeast Minnesota by Kristi Marohn - November 8, 2023 at: https://www.mprnews.org/story/2023/11/08/epa-says-further-actions-needed-to-protect-human-health-from-nitrate-in-southeast-minn

> *We also encourage Minnesota to consider modifications to the state's Technical Standards for Nutrient Management with regard to land application of manure, litter or process wastewater, and any Minnesota guidelines for land application of commercial fertilizer, specific to Karst areas.*[21]

In response to the citizen petition and an order from the EPA, MPCA has drafted revised permit conditions and manure management rules for large CAFOs, but the draft rules are drawing strong criticism from experts for falling far short of what the EPA ordered and what is needed to protect the state's waters, and private well-owners. This is especially true in sensitive ground water and high value surface waters (trout streams) in S.E. Minnesota, and the central sand plains area, which includes eastern Becker County.

The Straight River is known as a premier trout stream although trout populations and species have declined and shifted to more tolerant species (i.e. Brown trout rather than Brook Trout.) Soils in the area known as the Ponsford Prairie consist primarily of glacial outwash sands and gravel, where the shallow ground water is not protected by less porous clay or silty soil layers nearer the surface. Many private wells in this rural area were developed to use these shallow waters because these wells are lower in cost than deeper water aquifer wells, and this water historically was fairly high quality in spite of its vulnerability to pollution from various land uses like those described above.

Minnesota Outdoor News published an article in July, 2024[22] that quoted a groundwater hydrologist who is focused on private well owner interests:

> *Jeff Broberg is a founder of the Minnesota Wells Owners Organization and former president of the Minnesota Trout Association. Broberg, who lives in southeastern Minnesota, said the new proposed rules on the two feedlot permits are welcomed but long overdue and don't go far enough.*
>
> *"I'm pleased that the MPCA is finally starting this effort," said Broberg, adding that*

[21] US Environmental Protection Agency August 2023 Letter to Minnesota Agencies found at: https://www.epa.gov/system/files/documents/2023-11/ao-rmod-reponse-letter_20230510-508.pdf

[22] **MPCA Seeks Comments on Plan to Curb Pollution in State Waters** -Outdoor News Minnesota, Vol. 57, No. 29, Page 1 By Tori J. McCormick

Minnesota's "regulatory environment for feedlots is far too friendly."

"I'm dubious that it will have any effect. But we'll see," he said.

Broberg said if the MPCA is serious about tackling nitrate contamination in state lakes, rivers, and streams, the agency needs to better regulate all state feedlots – not just the largest 1,000. That's a sentiment shared by other state groups, including the Minnesota Center for Environmental Advocacy and Land Stewardship Project.

"Feedlots are altering our environment and our public health," said Broberg, who urged water quality advocates of all stripes to comment on the proposed changes to MPCA feedlot permits. "We need to recognize that … and how our surface and groundwater are so vulnerable and being impacted."

A similar petition to EPA has recently been filed by citizen groups in the Northeast corner of Iowa, where nearly identical topography and groundwater sensitivity exist. Private wells and public water treatments systems in this and other parts of Iowa, have experienced rapidly increasing nitrate concentrations in both ground and surface waters. In an article posted in their publication[23] Food & Water Watch staff attorney Dani Replogle said:

"The state's failure to regulate industrial agriculture pollution has steadily eroded Iowans' right to clean drinking water. For decades, Northeast Iowa residents have been exposed to dangerous levels of nitrate contaminated water. As the state reckons with high cancer levels and ongoing pollution regulation rollbacks, federal action is needed to safeguard the right to clean water. EPA must exercise emergency authority to hold polluters accountable and deliver safe drinking water in Iowa."

With this information and the additional reference material below, Becker County can benefit from other's experiences and take more effective planning and zoning actions to avoid the predictable outcome of industrial-scale agriculture migrating into the county without the necessary safeguards and monitoring in place.

Becker County's sensitive surface and groundwater regions include its eastern Becker County sand plain areas, with its high value trout streams, its more highly developed central lakes area, and its western agricultural areas served by extensive patterned drain tile and drainage ditch

[23] https://www.foodandwaterwatch.org/2024/04/16/iowa-environmental-groups-petition-epa-for-emergency-action-on-iowa-drinking-water/

systems. Having sufficient, pre- and post-CAFO project construction ground and surface water monitoring in place, can be a useful tool for holding industrial agriculture accountable for its operations and providing the assurances Becker County citizens need to keep from reliving the regretful experience of others.

The MNDNR has recently completed a groundwater atlas for Becker County that could serve as a preliminary baseline for groundwater quality before industrial livestock agriculture has a greater impact. Groundwater sensitivity maps are also available from the MPCA. The MPCA also publishes an impaired (surface) waters list that is updated and submitted to the EPA and released to the public periodically. This information, along with the Watershed Restoration and Protection Plans (WRAPS) co-produced by the MPCA and local water management entities, provides much of the historical background information on water quality in Becker County. Here again, this background information can be used proactively to gauge and even predict the water quality trends attributable to increases in industrial agriculture, both in crops and livestock.

These realities highlight the importance of using local land use plans, zoning maps and ordinances for proper siting, inspection and monitoring of large livestock facilities, where the public can have greater confidence that pollutants are not and will not enter surface or groundwaters.

Importance of Water Sampling and Monitoring

The feedlot industry persistently claims that manure management plans limited to "agronomic rates" of application are sufficient to protect surface and groundwaters. The information presented in sections above demonstrate that this is not true.

One of the best strategies to test the performance of such plans is to actually monitor the water. New Mexico began requiring performance monitoring for large confined dairy operations as early as the 1990's. During the first six years of monitoring, significant increases in ammonia and nitrates were found in groundwater. A 1999 state agency report entitled: *Dairy Feedlot Contributions to Groundwater Contamination - A Preliminary Study in New Mexico* states:

"Feedlot milk production has increased dramatically in New Mexico in the past decade, along with the potential for groundwater contamination from animal wastes. State statutes require animal feedlots to maintain groundwater-monitoring wells and report water quality analyses quarterly to the New Mexico Water Quality Control Commission. This preliminary study analyzed six years of groundwater quality data from seven dairy feedlots and found elevated levels of nitrate, ammonia, chloride, total Kjeldahl nitrogen, and total dissolved solids. Samples were obtained from groundwater-monitoring wells located around dairy wastewater lagoons that were lined with clay, concrete, or synthetic membranes. Mean nitrate concentrations were significantly higher in groundwater samples taken in the vicinity of lagoons with clay liners. Lagoons with synthetic liners produced the lowest mean groundwater concentrations of ammonia and nitrate. Mean concentrations for all contaminants tended to increase as the size of dairy herds increased. Nitrate was the only groundwater contaminant measured that showed a consistently increasing trend from 1992 to 1997. [24]

In 2015, the state adopted the Dairy Rule, which requires dairies to monitor groundwater impacts and to line waste lagoons. The rule came following a 2009 study by NMED's Groundwater Protection Division that found 60 percent of the state's dairies were polluting groundwater. [25]

The Public Engagement Survey used to gauge citizen priorities for the current land use planning effort found that 70% of Becker County citizens thought more should be done to protect the water quality of lakes and streams.

Becker County has already set an important protective precedent by requiring a modicum of water sampling for large feedlots needing conditional use permits. But the water sampling required in a recent Conditional Use Permit lacks sufficient sophistication to ensure the

[24] **Dairy Feedlot Contributions to Groundwater Contamination - A Preliminary Study in New Mexico** – Sept, 1999. At: https://go.gale.com/ps/i.do?id=GALE%7CA55884900&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=00220892&p=HRCA&sw=w&userGroupName=anon%7Ee4bab884&aty=open-web-entry

[25] **New report looks at dairy operations in NM** -March 29, 2022 https://nmpoliticalreport.com/news/new-report-looks-at-dairy-operations-in-nm/

monitoring would provide useful information. Becker County could take a page from the New Mexico playbook and begin to require "performance monitoring" from new or expanding AFOs and CAFOs.

The comprehensive plan could present guidelines or suggest qualified consultants for designing appropriate ground or surface water monitoring regimes. Monitoring has been shown to clearly gauge the effectiveness of manure lagoon or pit containment and manure management plans that are supposed to protect both the surface and ground waters of the county. As has been found in New Mexico and Wisconsin, state and federal rules have, thus far, not proven effective enough. So, water quality monitoring, may be the county's best defense to protect the public's health.

MANURE PIT OVERFLOWS BECOME MORE FREQUENT WITH CHANGING WEATHER PATTERNS

Manure spills and pit overflow incidents present serious pollution risks to receiving waters and to human health. Risks that are increasing as the number of CAFOs increase and severe storms with high rainfall amounts increase in frequency under changing climate conditions. In June of this year seventeen CAFO owners were obliged to report overflows after heavy rains occurred in southern Minnesota. The state's largest feedlots, which include dairies and pig and turkey operations that have roughly 1 million pounds of total livestock or more, are required to report any manure overflows to the state. There are about 1,000 feedlots of that size in the state. State regulators ask smaller farms to report overflows as well, but they are not required to."

The Minneapolis Tribune account[26] of these overflows is quoted here below:

> *"Relentless rains this month have caused 17 manure pits at 15 large farms in southwestern Minnesota to overflow, releasing livestock waste into the environment.*

[26] **Seventeen manure pits reportedly overflow at large feedlots in southern Minnesota**
Heavy rain has spilled an unknown amount of livestock waste into the environment. By Greg Stanley
Star Tribune JUNE 26, 2024. At: https://www.startribune.com/manure-pits-reportedly-overflow-at-16-large-feedlots-in-southern-minnesota/600376074

The overflows, all at open pit lagoons, happened in Rock, Nobles and Jackson counties, said Andrea Cournoyer, a spokeswoman for the Minnesota Pollution Control Agency (MPCA). The agency is working to monitor and mitigate any potential damage from the spills, she said.

High concentrations of manure can be dangerous to human health and can cause fish kills and threaten water quality even after floodwaters recede. But the manure in the basins overflowing from the extreme rainfall is heavily diluted, said Randy Hukriede, feedlot program manager for the MPCA. None of the basins that overflowed contained pure manure.

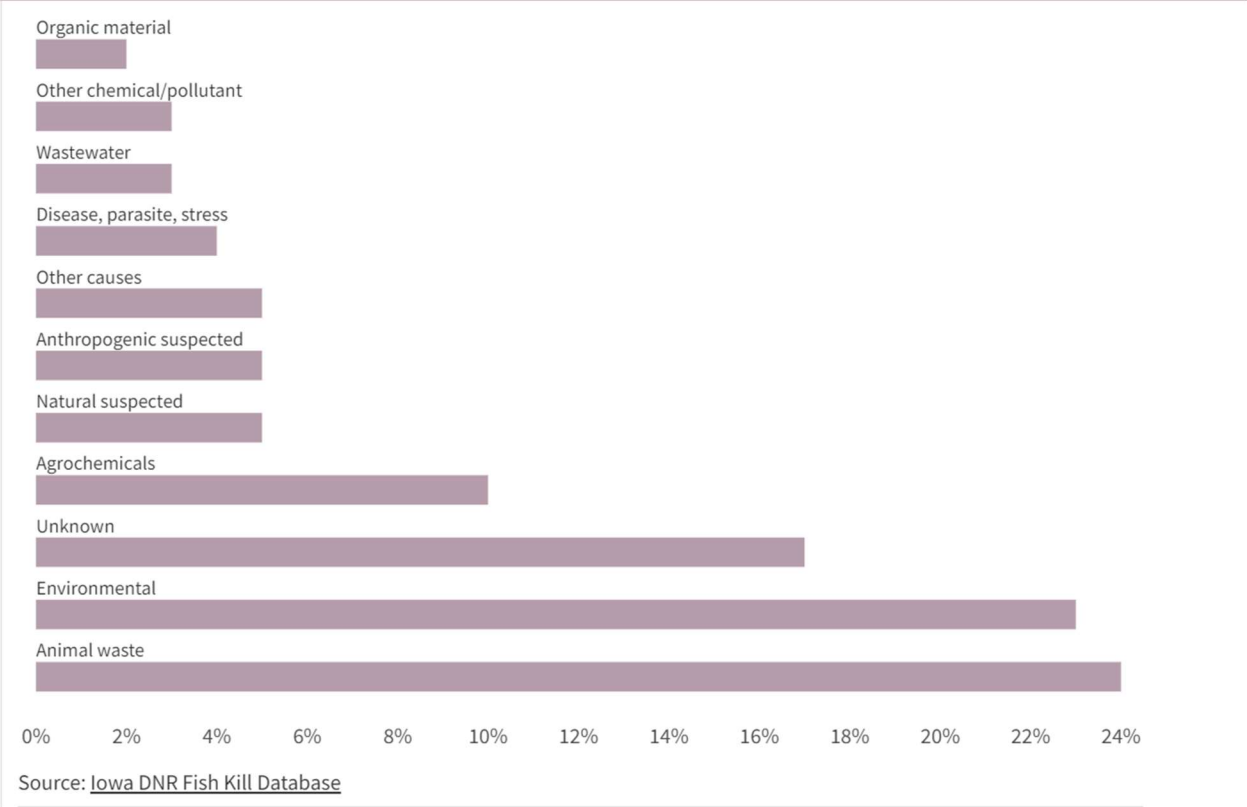
Manure pit overflows in Southeast Minnesota and Iowa have been linked to numerous fish kills. An Investigate Midwest report[27] in 2023 stated:

"Over the past four decades, 35% of fish kills are related to the state's primary industry — agriculture, according to an Investigate Midwest analysis of state data from 1981 to 2022."

What causes the fish kills in Iowa waterbodies?

Over four decades, animal wastes and fertilizers have been responsible for 34% of fish kill events.

[27] **Animal waste and agrochemicals are leading cause of fish kills in Iowa waterways**
Agriculture is the lifeblood of Iowa, but it also contributes to mass die-offs of fish in the state's waterways.
https://investigatemidwest.org/2023/06/01/animal-waste-and-agrochemicals-are-leading-cause-of-fish-kills-in-iowa-waterways/



Becker County has experienced similar increases in frequency and severity of storms dropping 3-6 or more inches of rain in a single event so it is predictable that manure pit overflows and potential fish kills will occur in our area. It is reasonable to predict that these risks will continue to increase if the number of CAFOs is allowed to grow given our changing climate in Becker or any other state or county.

CAFOs DEMAND LARGE QUANTITIES OF GROUND WATER

Industrial scale animal agriculture concentrates livestock in small areas and must extract all the water these animals need from just one or two wells. Large groundwater extraction from aquifers that are either small or are slow to recharge can cause supply problems for neighbors who rely on the same aquifer.

Some compare the water demands of CAFOs to that of small cities. One cow (one animal unit) consumes as much water as four adult humans. Therefore, a 10,000 cow CAFO requires as

much water as a city of 40,000 people. Becker County's population was 35,183 (2020 census), so just one industrial size CAFO would demand more water than all the people in the county.

State rules for protecting aquifers from over-extraction are fragmented and have been shown to be ineffective at protecting individual well-owners whose wells go dry or suffer reduced yield. One of the earliest systematic reviews of the CAFO impacts was found in a 2019 paper entitled: *WATER USE IN CONFINED ANIMAL FEEDING OPERATIONS (CAFOS) IN MINNESOTA: WHO'S KEEPING TRACK?* by Dara Meredith Fedrow. In his graduate thesis, prepared for Minnesota's Land Stewardship Project, Fedrow analyzed how effective Minnesota's water appropriation permit system was in overseeing water usage by large CAFOs. This research, conducted to inform the work of Land Stewardship Project (LSP), which is an advocacy nonprofit based in Minnesota, was published to inform state government agencies, water researchers, and local citizens. The entire paper can be read at the link in the footnote[28] below. Fedrow cites research by others that warned that:

> *"Groundwater is unequally distributed throughout Minnesota which can pose issues as agricultural groundwater use increases. Groundwater pumping is unsustainable in some parts of Minnesota and could deprive ecosystems and humans of water needed to survive."*

One of the recommendations Fedrow offers that is useful for the Becker comprehensive planning effort, is inserted here below.

> *"New areas of CAFO development should be watched closely to ensure CAFOs are obtaining the proper permits and for their impacts to the surrounding communities and watersheds. Hog CAFOs are reporting increasingly more water use in the south eastern part of Minnesota. This is particularly apparent in Mower and Steele Counties, corresponding to the Cannon River, Cedar River, and Upper Iowa River. Dairy CAFOs*

[28] *WATER USE IN CONFINED ANIMAL FEEDING OPERATIONS (CAFOS) IN MINNESOTA: WHO'S KEEPING TRACK?* by Dara Meredith Fedrow accessed on line at https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=12430&context=etd

appear to be opening in Norman and Kandiyohi counties. Norman county corresponds to a large percent increase in use of the Wild Rice River."

Fedrow's paper is recommended reading for those who seek to know more about CAFOs' demand for water, and the regulatory and societal problems foreseen for the ever-increasing demands on Minnesota's limited "clean" water supplies by industrial animal agriculture.

Becker County could use is Comprehensive Plan to alert well-owners to potential groundwater drawdown in the vicinity of proposed CAFO sitings and assist rural home-owners in monitoring their wells for signs of draw-down that may be caused by the facility. Well water levels could be added to a nitrate and fecal coliform county-wide well-monitoring program similar to the Midwest Assistance Program in Iowa. This program obtained grant funds to initiate and maintain the Iowa private well monitoring. The IWLA Chapter is willing to assist Becker County in designing a similar program and seeking the necessary grant funds to implement and maintain it.

Meanwhile, Becker County should request that MDNR monitor stream flows to establish the background and trend levels necessary to detect changes in critical low steam flows attributable to large groundwater appropriation by CAFOs. Low stream flows can impact Becker County's recreation and tourism economies including river-tubing, kayaking, canoeing, wildlife watching and stream fishing.

Ordinary Small Farmers Can Get Financially Trapped and Even Punished by the Industry

Conventional scale (small) farmers are not at fault or in any way to be blamed for being attracted to the offers from the industry representatives. With persistently narrow profit margins it makes a lot of sense to scale up and grow overall profits even though margins remain slim. But once "in the contract system" farmers all too often discover they are on a financial treadmill that is extremely difficult to escape. Some who try unsuccessfully to escape have suffered retribution from the industry. Some farmers who once were "contract farmers" are speaking out to alert

others of the risks and their efforts to transition back out. Modern Farmer's on-line magazine published one farmer's story.

> *When Paula and Dale Boles took over Dale's father's farmland in North Carolina, they thought that poultry farming would be a good way to work the land until they were ready to pass it on to their children. They obtained a contract with Case Farms, eventually switching over to Tyson, and built two poultry barns to company specifications, going $300,000 in debt to do so. It seemed like a good situation, though—as long as they could make their annual mortgage payment of $40,000, they'd be able to pay it off within 10 years.*
>
> *But soon, other expenses started getting tacked on. Tyson required a new computer system to control the temperature in the barns. This was another $70,000. Their propane bill averaged around $25,000 per year. Not making the updates wasn't really an option—no matter how much time and money you invested to be a farmer for the company, they could cut your contract at any time.*
>
> *And the income wasn't quite what they expected. Companies like Tyson pay their farmers in what's called a tournament system. There's a base pay, but whoever raises the best flock and has the best "feed conversion"—the biggest birds for the least feed— makes the most money, and payment decreases the further you go down the ladder. This essentially pits all the regional farmers against each other.*
>
> *"While contract farming, or "factory farming," has been exposed in the media for being exploitative of animals, the farmers who sign contracts with companies like Tyson, Perdue or other big players in animal agriculture also find themselves backed into a financial corner. But, over the last several years, there has been a wave of efforts to find ways to support farmers transitioning out of factory farming.*
>
> *"The way that the current structure of factory farming is designed is that the steps that carry with it the most risk and the most debt and the most liability are transitioned to the farmers," he says. "And so what you have is you have farmers building these extremely expensive facilities at the very specific direction [and] design of the company that they're working for. But they don't own the animals.*[29]

Antibiotic Resistance Linked to Feedlots

Becker County may not have the authority to address or curb the contribution of large animal feeding operations to antibiotic resistance, but the Comprehensive Plan could provide or suggest

[29]**They Once Worked in Factory Farming. Not Anymore.** Modern Farmer, May 07, 2024 at: https://modernfarmer.com/2024/05/they-once-worked-in-factory-farming-not-anymore/

tools to educate the public about the problem. This in turn could influence policy-makers at the appropriate level of authority to take remedial steps.

> *A **report** in 2020 by the Natural Resources Defense Council (NRDC), reveals that US cattle producers use more than 40% of all medically important antibiotics—those that are also used in human medicine—sold for use in US livestock, and use them three to six times more intensively than many of their European counterparts.*
>
> *NRDC says this overuse of antibiotics is a strategy used by the beef industry to offset heightened disease risks in feedlots, where cattle are routinely fed antibiotics to prevent disease whether or not they are ill, a practice that the World Health Organization discourages and that the European Union will no longer allow starting in 2022.*
>
> *The reports also argues that there is little transparency or accountability in the beef industry regarding its use of medically important antibiotics, and little urgency to rectify the problem.*
>
> *"Many infectious disease and antibiotic resistance experts believe such use is improper and helps contribute to reservoirs of drug-resistant bacteria on farms that can spread easily to humans through consumption of meat, exposure to soil or water contaminated with manure containing antibiotic-resistant pathogens, or contact with animals. They also worry that it reduces the effectiveness of antibiotics that are needed to fight infections in people."*[30]

This concludes our report. There are several other issues relating to large feedlot pollution problems that time did not allow Chapter researchers to investigate fully enough for inclusion here. While we make general references to the health impacts of nitrates that exceed regulatory standards, there is growing evidence that the standards are not seen as being fully protective of human health and linking nitrates to certain cancer risks.

[30] https://www.cidrap.umn.edu/antimicrobial-stewardship/report-slams-beef-industry-overuse-antibiotics

Also, there could be a chapter in the plan that informs citizens about the risks to public health when storms cause overflows of these storage facilities. A derecho or other storm or series of storms like those that occurred in S.E. Minnesota recently, could have similar impacts here in Becker County.

This concludes this report.

The IWLA Chapter, at the invitation of the planning consultants is preparing a narrative based on this and the Wake Boat Report for inclusion in or attachment to the draft Becker County Comprehensive Land Use Plan. Additional sources of information compiled by the League are shown below.

SOURCES OF OTHER USEFUL INFORMATION AND PUBLIC EDCUCATION TOOLS ON CAFOs.

The IWLA Chapter members compiled other authoritative reference materials, including video interviews with groundwater experts, lawyers, and citizens from Minnesota and neighboring states, that provide testimonials on their knowledge and experience with AFOs and CAFOs. Some of the content includes discussion of local economic impacts and describes how other local units of government are working to adopt plans and ordinances to address industrial scale feedlots. Interactive MPCA maps of feedlot locations in Minnesota are also provided.

Izaak Walton League Chapter Produced Videos with CAFO experts and Citizen Testimonials at: https://drive.google.com/file/d/17fEX-Wfztuq39zN4T4uXgnFkLOzasGNf/view

Freshwater Futures' Webinar - Great Lakes HABs & CAFO Manure Conference Series | May 2, 2024 Freshwater Future
https://www.youtube.com/playlist?list=PL_JsLZuTdlRu96Q1tarJmgjsWOHEdoIYv

Explosion of CAFOs in Iowa and its Impact on Water Quality and Public health at:
https://roadactivist.org/wp-content/uploads/2018/01/Explosion-of-CAFOs-in-Iowa-and-Its-Impact-on-Water-Quality-and-Public-Health.pdf

Economic Realities of CAFOs – Dr. John Ikerd - University of Missouri-Columbia at:
https://ikerdj.mufaculty.umsystem.edu/presentation-papers/factory-farms-cafos/economic-realities-of-cafos

Antibiotic Use in Animal Medicine and Antibiotic Resistance.
https://www.cidrap.umn.edu/antimicrobial-stewardship/study-predicts-global-increase-antimicrobial-use-food-producing-animals

https://www.cidrap.umn.edu/antimicrobial-stewardship/report-slams-beef-industry-overuse-antibiotics

DRAFT NARRATIVE FOR THE BECKER COUNTY COMPREHENSIVE PLAN
ADDRESSING
ANIMAL FEEDING OPERATIONS (AFOs)
&
CONCENTRATED ANIMAL FEEDING OPERATIONS (CAFOs)
to
The Becker County Planning Commission and Bolton Menk Consultants

Presented by
The Izaak Walton League of America
Minnesota Division, Prairie Woods Chapter
August 28, 2024

Introduction
The following narrative is submitted in response to the invitation to the League from Bolton-Menk planning consultants who are preparing the draft Comprehensive Land Use Plan for Becker County. The Consultant made this invitation in response to the League's special reports on impacts of factory-farm size feedlots and on wake boat/wake surfing impacts. The following narrative is suggested for addresses large livestock feeding operations. A companion narrative will address wake boats and will be submitted under separate cover.

[Suggested Comp Plan Narrative Begins Here]
The Becker County Public Engagement Survey used to gauge citizen priorities for the current planning effort found that 70% of Becker County citizens thought more should be done to protect the water quality of lakes and streams. When the nearly 500 respondents were asked to note their top priorities in terms of issues facing the county, slightly more than 50% see the environment as an issue to be prioritized. Additionally, in other public comments and focus groups citizens raised feedlots and wake boats as specific land and water uses that can adversely affect water quality, the county's economy, public health and the environment.

A county's land-use decisions about these livestock and poultry operations can have significant effects on the county's water quality, natural resources, human health, and county economy, but impacts vary widely depending on sizes and locations of the operations. Factors such as soil types, depth to groundwater, topography and proximity to surface waters, proximity to neighbors, and compatibility of activities are important to consider along with the cumulative impacts of all other land uses on valued natural, cultural and aesthetic resources. Highly sensitive water bodies may need special protections and waters already impaired may need remedial measures in a land use plan.

Known nitrate and coliform bacteria contamination in some of Becker County's groundwater and high value streams point to the need for better site selection for new or expanded livestock or crop irrigation operations to protect public and private well water supplies and a healthy fishing industry. Zoning can be an effective tool to compliment other volunteer or regulatory practices that have not prevented this contamination. Public health services to private well owners and stream recreational users may need to

be stepped up to respond to such contamination while corrective measures are implemented because these contamination problems do not have short term solutions.

The impact of a single livestock or poultry project may seem small, but when we look at the bigger picture, the challenges to the environment and human health from both the small and larger, industrial scale agriculture projects (crop and livestock) added together can be dramatic.

Irrigated specialty crops like potatoes have been in Becker County for some time but industrial livestock agriculture is relatively new. In other states and in southern Minnesota, the livestock industry has experienced increasingly adverse conditions attributable to overcrowding; too many large facilities in close proximity, increasing animal disease risks, depletion of available clean water supplies, saturation of available crop lands with manure, and growing community animosity stemming from nuisance odor, traffic and insect (fly) populations.

Because industrial scale livestock agriculture is a recent arrival in Becker County the current comprehensive plan update is particularly well timed to perform its purpose serving to protect the county's water quality, natural resources and human health and welfare. And the plan can serve to support and enhance the county's diverse economy that depends on tourism as much as on agriculture. The comprehensive plan can serve to more fully inform the County Board, the Planning Commission, County Planning and Zoning staff, and the public, on the consequences of allowing industrial scale animal feeding operations to first become established and then to possibly expand in Becker County. Potential impacts and risks to the public health and welfare of its current and future residents can be identified in the plan. This logically includes close examination of factors that may potentially degrade the value of the county's natural resources. As stated above, these factors represent threats to the vitality of the county's rural economy.

As new industrial-scale feeding operations migrate north from Iowa and southern Minnesota, into northwestern Minnesota, industrial farming supporters assert that economic pressures work to limit nitrate or phosphorus pollution from over-applying fertilizers or manure because these materials cost too much, and to do so would be wasteful. They point to federal and state regulations that also limit manure application through approved manure management plans. However, officials in neighboring states and S.E. Minnesota have found ever increasing concentrations of nitrates in their rivers, lakes and groundwater that are traceable to both commercial fertilizer and livestock manure. Accepted design standards for manure pits and lagoons allow for leakage of up to 500 gallons/acre/day of liquid wastes through soils below potentially reaching groundwater supplies, surface waters or both.

Manure management plans for these facilities that fully meet state and federal pollution control requirements consistently show leakage, spills and runoff cause measurable degradation of receiving waters. Because state and federal standards are design and operation standards, they do not control the location of new feedlots save the for some minimum setback distances from wells, streams and lakes. Becker County's existing setback distances from surface waters for feedlots are entirely arbitrary and are not based on protective criteria suited for the wide variety of settings farmers may choose for the operations. Likewise, the county does not review soil types, slopes or depths to groundwater aquifers when deciding whether or not to grant feedlot permits at any scale.

Local planning and zoning authority can be used to compliment state and federal design and operation standards to provide an additional margin of protection. By establishing minimum siting criteria based on soils, slopes, water body sensitivity or previous impairments and other suitable considerations county zoning maps can be developed depicting areas that are either suitable or unsuitable for locating new feedlots or intensive crop irrigation in this industrial Ag category.

Additional state or county public health services may be useful at increasing private well testing to detect existing contamination and to provide base-line data useful in detecting new contamination when well water quality deteriorates over time. Public notices are useful in warning lake and stream users when harmful bacteria or blue-green algae are found in favorite fishing or swimming lakes or streams.

Considerable consultation and cooperation will be needed with other county departments and the several state and federal agencies and towns and municipalities to collaboratively explore these issues and to implement protective strategies. But these actions are already required by Minnesota Statute 394.232 when comprehensive planning is undertaken. Notice must be given at the beginning of the community-based comprehensive planning process to the Department of Natural Resources, the Department of Agriculture, the Department of Employment and Economic Development, the Board of Water and Soil Resources, the Pollution Control Agency, the Department of Transportation, local government units, and local citizens to actively participate in the development of the plan.

All pertinent plans, data, policies and goals of the several state agencies along with those of towns and municipalities within the county, as well as other county departments must be reviewed along with adjacent White Earth Tribal governments and their land and water use plans.

In addition, the information in the Izaak Walton Leagues' special report entitled "Addressing AFO & CAFO Impacts in Becker County's Comprehensive Land Use Plan, Zoning Maps and Ordinances, August 1, 2024" should be incorporated or referenced in the final plan as supporting documentation.

Beyond these consultations and involvement steps in the Comprehensive Planning process the next steps for addressing AFOs and CAFOs would be preparation of zoning maps and codes that address the issues described in this section and any other information that is acquired through the interdepartmental and interagency consultations described above.

DRAFT NARRATIVE FOR THE BECKER COUNTY COMPREHENSIVE PLAN
ADDRESSING
Wake Boats and Wake Surfing
Presented to
The Becker County Planning Commission and Bolton Menk Consultants

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[Suggested Wake Boat Narrative Begins Here]
The Becker County Public Engagement Survey used to gauge citizen priorities for the current planning effort found that 70% of Becker County citizens thought more should be done to protect the water quality of lakes and streams. When the nearly 500 respondents were asked to note their top priorities in terms of issues facing the county, slightly more than 50% see the environment as an issue to be prioritized. Additionally, in other public comments and focus groups citizens raised feedlots and wake boats as specific land and water uses that can adversely affect water quality, the county's economy and the environment.

Wake boats are the only recreational sports watercraft specifically designed and engineered to create massive enhanced wakes to facilitate wake boarding and, especially, wakesurfing.

Wakesurfing is an elite, motorized water sport in which a rider (surfer) trails behind a boat, riding the boat's wake without being directly pulled by the boat. After getting up on the wake, typically by use of a tow rope, the wakesurfers will drop the rope and ride the steep face below the wave's peak in a fashion reminiscent of ocean surfing. Wakesurfing is promoted as a family friendly, low impact water sport. The boat travels through the water at 9 - 11 mph, always in transition (plowing) mode, never getting on plane while used for surfing.[1]

Credible esearch in Minnesota and other states finds that wake boats:

- If operated too close to shore: shoreline erosion; destruction of near-shore vegetation/habitat; destruction of loon nests.

[1] Wake boats are however, capable of being operated at faster speeds and on plane for pleasure boat riding or water skiing.

- If operated in water too shallow: disturbance of dormant bottom sediments releasing nutrients into the water column, including phosphorus, leading to poor water quality and algal blooms; destruction of fish habitat; uprooting native vegetation.
- Inability for others to safely use the lake, including anglers, users of non-motorized watercraft, and swimmers.
- Damage to docks, lifts and moored boats.
- Increased risk of spreading AIS because ballast receptacles cannot be completely drained. Zebra Mussel Veliger's can live up to 5 days in the residual water in wake boat ballast tanks.
- Are a polarizing issue within lake communities
- Reduced property values where erosion degrades shorelines, water quality declines, fishing is poorer and other leisure and recreational uses are less attractive.

As the sport increases in popularity and more wake boats appear on Becker County lakes, lake users and shoreland property owners will continue to experience more conflicts and additional property damage. Currently, in Becker County, law enforcement officers have little other than nuisance law to reduce water user conflicts but have no other tools to address damages of the type caused to shoreland, docks, moored boats and other property.

The state Legislature and the Minnesota Department of Natural Resources have made several regulatory tools available to counties such as Becker which would enable them to address surface water uses that includes wake boating and wake surfing.

Minnesota Statute 86B.201 and 86B.205, passed in the 1990s, describe the authority's local units of government have to adopt ordinances to govern watercraft operation on state waters. And these same laws directed the DNR to publish guidelines to assist counties at adopting water surface use ordinances for waters within their jurisdiction.

Among other things these statutes allow local county ordinances to:

- regulate the type and size of watercraft allowed to use the body of water and set access fees;
- limit the types and horsepower of motors used on the body of water;
- limit the use of the body of water at various times and the use of various parts of the body of water, and;
- regulate the speed of watercraft on the body of water and the conduct of other activities on the body of water to secure the safety of the public and the most general public use.

The statute also provides counties with the authority to contract with other law enforcement agencies to police the body of water and its shores.

These laws also allow counties the convenience of targeting certain problem lakes for these controls so the ordinance does not have to cover the whole county or all lakes. A single lake association, shore community or township can apply to a county board to adopt rules specifically designed for their area.

Minnesota's DNR helps to clarify this in their surface water use guidance to counties:

> *"With adequate knowledge and proper planning, zoning can be a powerful management tool for providing quality recreation, reducing conflicts among users, reducing impacts on natural resources and improving safety."*

Enforcement agreements can be negotiated with all area law enforcement entities including the DNR's game wardens & water patrols, the county sheriff's department and, where applicable, the White Earth Tribe. The Becker County Board need not be the initiators or implementers of wake boat control measures but the board has an important facilitator role to play in reducing adverse wake boat impacts by outlining options and procedures for doing so in the Comprehensive Plan. This would set the stage for adoption of ordinance controls in response to requests from townships, cities or lake groups.

Existing administrative procedure for the county suggests that an ordinance that may require enforcement by the County Sheriff be reviewed by the County Board's Sheriff's Committee for recommendations.

[NOTE: The Sheriff's Committee has the wake boat item on their September 25th agenda.]

Impacts of Wake Boats and Wakesurfing

An Izaak Walton League of America, Prairie Woods Chapter Special Report

To

The Becker County Board, the County Planning & Zoning Administrator, the County Planning Commission, the Comprehensive Planning Consultants and the Public

by

Charles Becker, Prairie Woods Chapter Senior Wakeboat Researcher
Erika Gilsdorf, Chair, Chapter Research Committee
Willis Mattison, Chapter Chief Science Advisor
August 12, 2024

Photo Credit: Photo by CL▲UDZ on flickr Summer 2011 Shooting Mastercraft avec Seb Staub. Ses versions sur: www.sebastienstaub.com

OCEAN-CLASS SURFING RIGHT BEHIND YOUR BOAT

-And on your own lake

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August 12, 2024

EXECUTIVE SUMMARY

This Wake Boat Report was prepared by the Izaak Walton League's Prairie Woods Chapter in support of Becker Counties Comprehensive Land-Use Plan Update in 2023-24. Research and actions in other states and in Minnesota were summarized and implications for Becker County are drawn.

Significant impacts from wave-action on shoreline and lake bottom sediment and habitat are described. Studies and other state's support operational setbacks from shoreline of between 500 and 600 feet and minimum water depths at 20 feet to minimize impacts.

Aquatic invasive species transfer between lakes by wake boats is an unresolved problem since standard decontamination methods are ineffective due to incomplete drainage capability of ballast tanks. A "Home Lake Rule" provision limiting a specific boat's use to a single lake unless certified as professional decontaminated is a potential mitigation.

The wake boat issue is divisive for lake-home owner communities and wake boat operation creates lake-user conflicts interfering with conventional boating, swimming and fishing activities. Shoreland erosion, repeated damages to docks and moored boats and loss of aesthetics can potentially cause losses of property values.

Misinformation on a county's authority to regulate lake surface use by ordinance is resolved by citing state statutes that counties actually do have this authority and can contract with other law enforcement entities to enforce the ordinance. Ordinances can be targeted to a single or multiple lakes at citizen, lake association or township request.

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[1] **Contact information:**
Chuck Becker, Senior Wake Boat Researcher, IWLA Prairie Woods Chapter, Safe Wakes for Minnesota Lakes - SafeWakes.org, Email: cbecker1952@gmail.com.

WAKE BOAT IMPACT REPORT

INTRODUCTION

The Becker County Board's decision in 2023 to use a comprehensive plan update to address emerging factory-farm style feedlot issues afforded citizens and members of non-profit organizations such as the Izaak Walton League unique opportunities to participate and even contribute their unique professional resources to the effort. With County Board Chair approval, members the League's local Prairie Woods Chapter offered to perform research to fill technical information gaps that neither the staff or the planning consultant could fill.

Along with factory-feedlot concerns, an additional new issue of wake boat impacts and user conflicts on area lakes was raised by individual citizens and members of the Environmental Focus group, one of two such groups established by the Planning and Zoning Director to gather stakeholder input to the planning process. The Environmental Focus group, in addition to the feedlot issue, raised concerns about wake boat impacts on lake shorelines and water quality. Lake user conflicts were also cited and the group recommended that strategies be employed to reduce or eliminate these impacts.

The county planning a zoning staff found they did not have the necessary capacity or resources to research the impacts of, or find effective strategies to address either the industrial scale feedlot or the wake boat issues. And the needed research was determined to be beyond the scope of work the consultants had been authorized to do for the funds available.

When alerted to the need, the local Izaak Walton League of America[2] chapter members met with county officials offering the League's wealth of expertise and volunteer time to research the controversial issues and generate, objective, fact-based reports and recommendations for inclusion in the draft comprehensive plan before the final plan was published. Thus, technical reports were prepared on both wake boats and feedlots (CAFOs).

This report will address the wake boat issue while a previous companion report similarly addresses large factory-farm style feed lots.

What is a wake boat?

Wake boats are the only recreational sports watercraft specifically designed and engineered to create massive enhanced wakes to facilitate wake boarding and, especially, wakesurfing. *"There is no replacement for displacement"* is an oft repeated

[2] More information on the Izaak Walton League and its local Prairie Woods Chapter can be found at the end of this report in Appendix C.

mantra among enthusiasts. More often than not, more power and weight mean a bigger wake due to the amount of water the boat displaces.

The specifications below are typical of the latest offerings from more than a dozen wake boat manufacturers:

- Malibu Wakesetter 26 LSV
- Length: 26.5'; Beam: 102";
- Horsepower: 603 HP

  Dry weight:---------- 7,000 lbs.
  Ballast:---------- 6,100 lbs.
  18 Passengers:------- 2,700 lbs.
  115 gal. tank: ---------- 690 lbs.
  Gross Weight: ---16,490 lbs. (equal to three Ford F150 Crew Cab pickup trucks)

- Cost of new wake boats: $100,000 - $500,000+ (Not including trailer, lift, equipment, tax, etc.).

NOTE: Other watercraft can be outfitted with after-market "fat sacks" (ballast) and "wake shapers" to create wakes big enough to wakesurf.

What is wake surfing?

Wakesurfing is an elite, motorized water sport in which a rider (surfer) trails behind a boat, riding the boat's wake without being directly pulled by the boat. After getting up on the wake, typically by use of a tow rope, the wakesurfers will drop the rope and ride the steep face below the wave's peak in a fashion reminiscent of ocean surfing.

Wakesurfing is promoted as a family friendly, low impact water sport. The boat travels through the water at 9 - 11 mph, always in transition (plowing) mode, never getting on plane while used for surfing.[3]

Why are many people concerned about wake boats and wakesurfing?

- If operated too close to shore: shoreline erosion; destruction of near-shore vegetation/habitat; destruction of loon nests.
- If operated in water too shallow: disturbance of dormant bottom sediments releasing nutrients into the water column, including phosphorus, leading to poor water quality and algal blooms; destruction of fish habitat; uprooting native vegetation.
- Inability for others to safely use the lake, including anglers, users of non-motorized watercraft, and swimmers.
- Damage to docks, lifts and moored boats.

[3] Wake boats are however, capable of being operated at faster speeds and on plane for pleasure boat riding or water skiing.

- Increased risk of spreading AIS because ballast receptacles cannot be completely drained. Zebra Mussel Veligers can live up to 5 days in the residual water in wake boat ballast tanks.
- Polarizing issue within lake communities
- Reduced property values where erosion degrades shorelines, water quality declines, fishing is poorer and other leisure and recreational uses are less attractive.

As the sport increases in popularity and more wake boats appear on Becker County lakes, lake users and shoreland property owners will begin to complain more and more to law enforcement officers and elected officials that the problem is becoming intolerable and that something has to be done.

What factual evidence exists to show potential damages are real?

The potential for environmental harms and user conflicts have now been well researched and documented. In Minnesota, most of this work has been performed and is on-going by the University of Minnesota's St. Anthony Falls Laboratory. Some of the St. Anthony Falls Lab's findings and a Wisconsin study are outlined below with links to more details.[4]

Phase I: A Field Study of Maximum Wave Height, Total Wake Energy, and Maximum Wake Power Produced by Four Recreational Boats on a Freshwater Lake - https://conservancy.umn.edu/items/bd2d2968-21c4-4726-8a61-53e7daafcb56

- maximum wave heights that were ~2-3 time larger (500'+ from shore)
- total wave energies that were ~6-9 times larger (575'+ from shore)
- maximum wave powers that were ~6 to 12 times larger than the non-wakesurf boats (600'+ from shore)
- It has also been found that wave height alone can be a poor indicator of erosion potential and energy is considered a better indicator of potential shoreline impact."

"Based on the data and our example method for determining recommended operational distance, we show that when operating under typical wakesurfing conditions, wakesurf boats required distances greater than 500 ft to attenuate wake wave characteristics (height, energy, and power) to levels equivalent to non-wakesurf boats operating under typical planning conditions. A second example, in which the largest wave was used as reference for the non-wakesurf boats an operational distance of 425 ft or greater was required."[5]

[4] Most links in this report are not active and must be copied and pasted into internet browser. Black font was used in this report to reduce printing costs.

[5] https://conservancy.umn.edu/server/api/core/bitstreams/e8866f1b-ae7e-411e-a2cb-0156cabeabc1/content

Phase II: Prop-wash and Water Quality

https://sites.google.com/umn.edu/healthywatersinitiative/project-updates

- On-the-water study Fall of 2022 (600 hp wake boat and two cruisers)
- People/Organizations anxiously awaiting full report

Phase III: Received $415,000 LCCMR Grant to continue 3-year research

What role can comprehensive land-use planning play in what seems a water surface use?

It is generally understood that Minnesota county land-use planning, zoning ordinances and permits can only apply to land-based activities. Water surface use regulation normally falls within the purview of the state Department of Natural Resources and their water patrols. However, wake boating can and does impact shore land, shoreland use, property owners and potentially the county's tourism and lake and vacation home-based economy.

This, in turn can have adverse effects on the county's tax base. Studies have shown that deteriorating water quality, poor or altered fish populations or loss of natural aesthetics can reduce property values and cause tourists to seek more pleasing or rewarding lakes elsewhere for leisure and recreation.

The League evaluated how land-use planning could be a useful instrument for educating decision-makers and the public about the issue and explored measures to address the problem. We learned that the Minnesota Department of Natural Resources (MDNR) had published a guidance document for counties on zoning for lake surface uses regulation. The guidance was in response to the Minnesota Legislature's instructions to the DNR do so in 1990. The guidance states, in part, that:

> *"With adequate knowledge and proper planning, zoning can be a powerful management tool for providing quality recreation, reducing conflicts among users, reducing impacts on natural resources and improving safety."*[6]

(See the section below titled: "Finding Solutions to Wake Boat Issue Through Zoning")

What are other lake states finding and what are they doing about wake boat problems?

Michigan, Vermont and Wisconsin have done their own research and as a result, some have moved to limit or zone wake boat use on large lakes or even ban their use entirely on smaller lakes. Research and policies from these three other states are presented here. Other states are considering similar controls.

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[6] Initiating local surface use zoning at: https://www.dnr.state.mn.us/regulations/boatwater/surfaceusezoning.html (Also attached as Appendix B)

- **Michigan DNR Fisheries Division Report** at: https://mymlsa.org/fisheries-report-37-wake-boat-study-official-version-released-on-7-28-2023/
- Operate at least 500’ from shore
- Operate in waters at least 15’ deep

Vermont's New Wakeboat Rule Goes into Effect for the 2024 Boating Season

- Vermont Department of Environmental Conservation (DEC) received 54-page petition from Responsible Wakes for Vermont Laes (RWVL) at: http://responsiblewakes.org/.
- As of April 15, 2024, a wakeboat may only operate in “wakesports” mode in designated wakesports zones of Vermont’s lakes, ponds, and reservoirs.
- A wakesports zone of a lake or pond is an area of at least 50 acres over 20 feet deep, at least 200 feet wide, and over 500 feet from shore.
- “Home Lake Rule”: Must declare your home lake. If trailering your wake boat to another lake you must have proof of professional decontamination. (Concerns with spread of AIS.)
- See details at: https://dec.vermont.gov/watershed/lakes-ponds/vermont-use-public-waters-rules/wakeboats

Wisconsin: Studies Led to Ordinances Passed in at Least 11 Jurisdictions

- North Lake Wisconsin - Water Quality and Wave Impact Study

https://nlmd.org/wp-content/uploads/2022/07/nlmd%20phase-2-study-report-july-20-2022-with-appendices.pdf, or;

https://www.safewakes.org/_files/ugd/2936a3_e64f2cd98fcb49c9b060fa11a959fbd0.pdf

- Underwater drone video showing bottom disturbances at least 20’ deep
- Phosphorus levels in the water column increased 25% after one pass of wake boat
- Waupaca County towns pass ordinances to prohibit wake-enhanced boating;
- The towns of Dayton, Farmington and Lind in Waupaca County passed ordinances to prohibit wake-enhanced boating on their lakes: https://www.jsonline.com/story/sports/outdoors/2024/07/26/waupaca-county-towns-pass-ordinances-to-prohibit-wake-enhanced-boating/74557414007/
- A Waupaca County 2024 survey showed 95% support for the prohibition.
- Big Cedar Lake Wisconsin: https://youtu.be/XuUvWnIXRPo
- Video of wake boat impacts over several years at a depth of 20’
- Bottom goes from lush vegetation to desert

Finding Solutions to Wake Boat Issues in Becker County Through Zoning

Historically, Becker County officials and citizens have been under the impression that counties do not have and cannot obtain authority to regulate lake surface water use. It has been the conventional thinking that this authority is reserved solely for the Department of Natural Resources (DNR). The League researched applicable Minnesota statues and found that this conventional belief was not correct.

Minnesota Statute 86B.201 and 86B.205, passed in the 1990s, describe the authorities local units of government have to adopt ordinances to govern watercraft operation on state waters. And these same laws directed the DNR to publish guidelines to assist counties at adopting water surface use ordinances for waters within their jurisdiction.

Among other things these statutes allow local county ordinances to:

- regulate the type and size of watercraft allowed to use the body of water and set access fees;
- limit the types and horsepower of motors used on the body of water;
- limit the use of the body of water at various times and the use of various parts of the body of water, and;
- regulate the speed of watercraft on the body of water and the conduct of other activities on the body of water to secure the safety of the public and the most general public use.

The statute also provides counties with the authority to contract with other law enforcement agencies to police the body of water and its shores.

It also allows the convenience of targeting certain problem lakes for these controls so the ordinance does not have to cover the whole county or all lakes. A single lake association, shore community or township can apply to a county board to adopt rules specifically designed for their area.

Cook County in Minnesota took advantage of this targeted approach for Caribou Lake. Using the procedure outlined by the MDNR in its guidance documents[7] for this purpose, Cook County targeted one lake where citizens identified potential problems with wake boats.

Cook County's application to the DNR and the county ordinance the DNR approved is attached as Appendix D. The statutes and DNR Guidelines can be found in appendix A and B of this report.

CONCLUSIONS

The conclusions reached in this report for Becker County reflect those of the U. of M. St. Anthony Falls Laboratory and the MDNR in their guidance on lake surface use zoning.

St. Anthony Falls Lab researchers stated:

[7] Ibid p. 6

"The lakes in Minnesota are considered among the state's most valuable natural resources and are utilized by many visitors and citizens throughout the year. The protection and preservation of surface water resources, lake and shoreline ecosystems, and lakeshore property are shared goals for many in Minnesota. Recreational boating is a highly popular activity and includes motorized and non-motorized watercraft. In recent years, with the growth of recreational activities including the emergence of the sport of wakesurfing, there has been growing concern over the impacts of boat-generated waves and propeller wash on these natural resources. The research reported here was motivated by a need to better understand the characteristics of wakes and waves produced by recreational boats common on lakes and rivers, in particular, in the state of Minnesota."

Research in Minnesota and other states finds that wake boats:

- If operated too close to shore: shoreline erosion; destruction of near-shore vegetation/habitat; destruction of loon nests.
- If operated in water too shallow: disturbance of dormant bottom sediments releasing nutrients into the water column, including phosphorus, leading to poor water quality and algal blooms; destruction of fish habitat; uprooting native vegetation.
- Inability for others to safely use the lake, including anglers, users of non-motorized watercraft, and swimmers.
- Damage to docks, lifts and moored boats.
- Increased risk of spreading AIS because ballast receptacles cannot be completely drained. Zebra Mussel Veliger's can live up to 5 days in the residual water in wake boat ballast tanks.
- Are a polarizing issue within lake communities
- Reduced property values where erosion degrades shorelines, water quality declines, fishing is poorer and other leisure and recreational uses are less attractive.

And Minnesota's DNR states in their surface water use guidance to counties:

"With adequate knowledge and proper planning, zoning can be a powerful management tool for providing quality recreation, reducing conflicts among users, reducing impacts on natural resources and improving safety."

Further, the Minnesota Legislature provided Becker and other counties the authority and flexibility to adopt county-wide surface water use ordinances or to target problem lakes with site specific ordinances in response to lake associations, township or other lake group's concerns. Enforcement agreements can be negotiated with all area law enforcement entities including the DNR's game wardens & water patrols, the county sheriff's department and, where applicable, the White Earth Tribe.

The Becker County Board need not be the initiators or implementers of wake boat control measures but the board can play an important facilitator role in reducing adverse wake boat impacts by outlining options for doing so in the Comprehensive Plan.

The League has been invited by the planning consultants to draft policy language for the Becker County Comprehensive plan to reflect the findings and conclusions in this report. This narrative is being prepared and will be published in the coming weeks.

This concludes this report.

APPENDIX A – STATUTES 86B.201 & 86B.205

§86B.201 STATE LAW AND LOCAL ORDINANCE AUTHORITY.

Subdivision 1. **Applying state law.**

The provisions of this chapter and of other applicable laws of this state shall govern the operation, equipment, numbering, and all other related matters for a watercraft operated on the waters of this state, or the time when an activity regulated by this chapter may take place.

Subd. 2. **Local authority to adopt ordinance.**

(a) This chapter does not limit the authority of a political subdivision of this state to adopt regulations that are not inconsistent with this chapter and the rules of the commissioner relating to the use of waters of this state that are wholly or partly within the territorial boundaries of a county or entirely within the boundaries of a city.

§86B.205 WATER SURFACE USE ORDINANCE.

Subdivision 1. **Assistance.**

The commissioner shall develop and publish guidelines to assist counties adopting water surface use ordinances for waters within their jurisdiction.

Subd. 2.**Surface use ordinances.**

(a) A county board may, by ordinance, regulate the surface use of bodies of water located entirely or partially within the county and not located entirely within the boundary of a single city or lake conservation district established by law.

(b) If a body of water is located within more than one county, a surface use ordinance is not effective until adopted by the county boards of all the counties where the body of water lies under section 471.59 or placed into effect by order of the commissioner under subdivision 9.

(c) With the authorization of an affected city or lake conservation district, a county board may assume and exercise the powers in subdivisions 2 to 5 with respect to bodies of water lying entirely within that city or lake conservation district. The regulation by the county of the surface use of a portion of a body of water located within the boundary of a city must be consistent with any city regulation existing on May 25, 1973, of the surface use of that portion of the body of water. After January 1, 1975, the ordinance must be consistent with the provisions of this chapter and rules of the commissioner under this chapter.

Subd. 3.**Prior ordinances invalid without approval.**

A surface use zoning ordinance adopted under subdivisions 2 to 5 by a local governmental unit after May 25, 1973, is invalid unless it is approved by the commissioner.

Subd. 4.**Approval of ordinances.**

A proposed surface use zoning ordinance must be submitted to the commissioner for review and approval before adoption. The commissioner must approve or disapprove the proposed ordinance within 120 days after receiving it. If the commissioner disapproves the proposed ordinance, the commissioner must return it to the local governmental unit with a written statement of the reasons for disapproval.

Subd. 5.**County regulatory authority.**

A county board may:

(1) regulate and police public beaches, public docks, and other public facilities for access to a body of water, except:

(i) regulations are subject to subdivision 6;

(ii) a county board may not regulate state accesses; and

(iii) a municipality may by ordinance preempt the county from exercising power under this subdivision within its jurisdiction;

(2) regulate the construction, configuration, size, location, and maintenance of commercial marinas and their related facilities including parking areas and sanitary facilities in a manner consistent with other state law and the rules of the commissioner of natural resources, the Pollution Control Agency, and the commissioner of health, and with the applicable municipal building codes and zoning ordinances where the marinas are located;

(3) regulate the construction, installation, and maintenance of permanent and temporary docks and moorings in a manner consistent with state and federal law, permits required under chapter 103G, and sections 86B.111 and 86B.115;

(4) except as provided in subdivision 6, regulate the type and size of watercraft allowed to use the body of water and set access fees;

(5) subject to subdivision 6, limit the types and horsepower of motors used on the body of water;

(6) limit the use of the body of water at various times and the use of various parts of the body of water;

(7) regulate the speed of watercraft on the body of water and the conduct of other activities on the body of water to secure the safety of the public and the most general public use; and

(8) contract with other law enforcement agencies to police the body of water and its shore.

APPENDIX B - MDNR Guidelines for Adopting Local Water Use Ordinances

Initiating local surface use zoning

Each year the Minnesota Department of Natural Resources (DNR) receives a number of questions regarding the placement of restrictions on lakes and rivers. With over 800,000 boats registered in Minnesota, some conflicts can be expected in the years to come. This information is designed to address the most frequently asked questions regarding this process - called "water surface use management" (WSUM) or "water surface use zoning." The goal of surface use management is to enhance the recreational use, safety, and enjoyment of lakes and rivers and to preserve them as natural resources of the state.

How do we start?

All water surface use management starts at the local unit of government - town, city or county, depending upon where the lake or river is located. Any ordinances proposed by the local unit of government must have a hearing and be approved by the DNR before they can go into effect. To improve the process, any local unit of government that is contemplating restrictions should contact the DNR as soon as possible at the address or phone number listed below for a packet that will assist them in the completion of the required information before submission to the Department.

What steps do we follow?

There are a number of steps to follow when considering surface use restrictions - observation, planning, and monitoring the outcome are important. One of the things to consider is that there may already be a state law or rule on the books to handle a specific problem and no additional restrictions may be needed - you may want to check with the local DNR conservation officer or county sheriff's department first. If surface use zoning is the answer, the following should be considered when looking at any of the options listed below:

- accommodating all compatible uses, where feasible.
- minimizing adverse impacts on natural resources.
- minimizing conflicts between users to provide for maximum use, safety and enjoyment.
- conforming to the standards set in law and rule.

Important factors which influence what type of controls are selected depend upon: the type of water body (lake or river), size, depth and shape of a lake, current and future shoreland development, relationship to other water bodies, environmental factors, accident and safety data, and recreational use patterns. After these are considered, there are a number of options available to address the variables.

Available options

Time zoning
Used in conjunction with other zoning methods to define times, days of the week or periods during the year when restrictions are effective.

Choices:

- 24 hours a day
- sunrise to sunset
- 9am to 6pm
- noon to 6pm
- Memorial Weekend through Labor Day Weekend (either on all days or only on weekends and holidays) or all year.

Directions of travel
Useful for controlling conflict from high speed activities on a lake, where speed zones may also be established.

Choices:

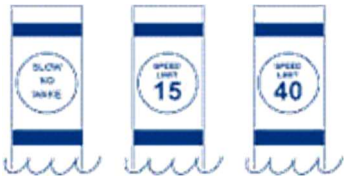
- counter-clockwise direction of travel.

Motor type and size
Restrictions on boat type and size are found mostly on smaller lakes, especially where there has been minimal motorboat use on the lake and future development may be planned. It controls speed by controlling horsepower.

Choices:

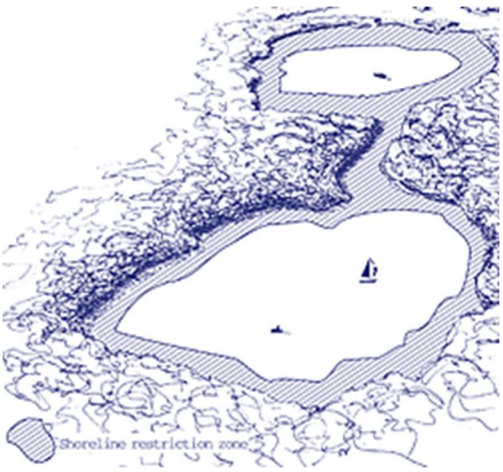
- no motors
- electric motors
- 10 hp allowed
- 25 hp allowed

Speed limits
Useful for controlling watercraft speeds for safety or resource concerns. Requires more enforcement than other types of controls.



Choices:

- slow/no wake (5mph)
- 15 mph
- 40 mph



Area zoning
Also used in conjunction with other zoning methods to identify specific restrictions a lake or river. As an example, speed restrictions may be in place (near marinas or in narrow channels). These areas are normally marked with buoys or signs placed by the local unit of government.

Choices:

- restrictions placed as needed
- slow/no wake speeds at 100-150 feet from the shore

Other restrictions
Restrictions, such as type and size of watercraft and other surface uses (swimming, restrictions on motor vehicle use on the ice, etc.) are also possible. It is also possible to petition the DNR for a variance from any of the listed standards.

Conclusions

Effective zoning defines objectives clearly, inventories resources, identifies land uses, appraises political influences, and requires public participation. A DNR survey of boat owners found that:

- boaters who request restrictions prefer speed, horsepower and boat type/size controls
- perception of zoning needs vary by location and watercraft use on the lake or river
- boaters in the Metro Area are more likely to ask for restrictions than those in Greater Minnesota

With adequate knowledge and proper planning, zoning can be a powerful management tool for providing quality recreation, reducing conflicts among users, reducing the impact on natural resources and improving safety.

Contact

Capt. Adam Block
DNR boating law administrator
adam.block@state.mn.us
651-259-5057

APPENDIX C

COOK COUNTY APPROVAL LETTER FROM DNR AND ORDINANCE

[MDNR LETTERHEAD OMITTED]

May 6, 2024

James Joerke
County Administrator
Cook County
411 W 2nd Street
Grand Marais, MN 55604

Dear Mr. Joerke,

The Department of Natural Resources (DNR) has completed the review of the materials received from Cook County pertaining to Caribou Lake. The request included the following:

1. Prohibiting wake surfing in any area that meets one or more of the following:

    a. Any area that is less than 500 feet from the shoreline or another watercraft.

    b. Any area in which the water depth is less than 20 feet.

2. No person may operate a boat on Caribou Lake in an artificially bow-high manner, to increase or enhance the boat's wake.

Upon review, the DNR has approved your proposed ordinance (Attachment A).
Any changes to the ordinance would have to be submitted to remain valid. Please forward a copy of the final signed ordinance for our official files to CAPT Adam Block our State Boating Law Administrator. You can forward a copy to CAPT Block via email at adam.block@state.mn.us.

Sincerely,

Colonel Rodmen Smith
Chief Conservation Officer/Division Director
Attachment A

cc:

CAPT Adam Block, State Boating Law Administrator
CAPT Scott Staples, DNR R2 Enforcement Manager
LT Dan Thomasen, DNR R2, District 6 Supervisor
Cook County Sheriff Pat Eliasen
WSUM File
Minnesota Department of Natural Resources • Division of Enforcement

500 Lafayette Road, Saint Paul, MN 55155

Attachment A

WATER SURFACE USE ORDINANCE

STATE OF MINNESOTA

COUNTY OF COOK

ORDINANCE NO.____

AN ORDINANCE REGULATING THE SURFACE USE OF CARIBOU LAKE.

Section 1: PURPOSE, INTENT AND APPLICATION: As authorized by Minnesota Statutes 86B.201, 86B.205, and 459.20, AND Minnesota Rules 6110.3000 - 6110.3800 as now in effect and as hereafter amended, this Ordinance is enacted for the purpose and with the intent to control and regulate the use of the waters of Caribou Lake, located in Lutsen Township, Cook County, Minnesota, said body of water being located entirely within the boundaries of Cook County, to promote its fullest use and enjoyment by the public in general and the citizens of Cook County in particular, to insure safety for persons and property in connection with the use of said waters; to harmonize and integrate the varying uses of said waters; and to promote the general health, safety and welfare of the citizens of Cook County, Minnesota.

Section 2: DEFINITIONS: Terms used in this ordinance related to boating are defined in M.S. § 86B.005.

Section 3: WAKE SURFING: Wake surfing, defined as the untethered use of a surfboard behind a watercraft, is prohibited on Caribou Lake in any area that meets one or more of the following criteria:

(a) Any area that is less than 500 feet from the shoreline or another watercraft.

(b) Any area in which the water depth is less than 20 feet.

Section 4: WAKE ENHANCEMENT: No person may operate a boat on Caribou Lake in an artificially bow-high manner, in order to increase or enhance the boat's wake. Such prohibited operation shall include wake enhancement by

use of ballast, mechanical hydrofoils, uneven loading or operation at transition speed. Transition speed means the speed at which the boat is operating at greater than slow-no-wake speed, but not fast enough so that the boat is on plane. It shall not be a violation of this ordinance to operate a boat through the ordinary transition from no wake to up on plane and from on plane to no wake.

Section 5: ENFORCEMENT: The primary responsibility for enforcement of this ordinance shall rest with the Cook County Sheriff's Office. This, however, shall not preclude enforcement by other licensed peace officers.

Section 6: NOTIFICATION: It shall be the responsibility of Cook County, Minnesota, to provide for adequate notification of the public, which shall include placement of a sign at each public watercraft access outlining essential elements of the ordinance, as well as the placement of necessary buoys and signs.

Section 7: PENALTIES: Any person who shall violate any of the provisions of this Ordinance shall be guilty of a petty misdemeanor and subject to a fine of up to $300.00 for a first offense. For second and subsequent offenses, any person who shall violate any of the provisions of this Ordinance shall be guilty of a misdemeanor and subject to a fine of up to $1000.00 and up to 90 days in jail.

Section 8: EFFECTIVE DATE: This Ordinance shall be in effect from and after the date of its passage and publication.

Passed by the Cook County Board of Commissioners on this ____ day of ____, 2024.

APPENDIX D
IZAAK WALTON LEAGUE OF AMERICA

Locally, the Izaak Walton League of America (ILWA) Prairie Woods Chapter, established in the 1940's, has a long-standing collaborative relationship with area communities in a variety of conservation matters. More recently, chapter members worked cooperatively with the Becker County Board the "Save the Trees Coalition" and other citizens to prevent unnecessary tree removals in the Smoky Hills State Forest along the Lake Country Scenic Byway. The successes realized from these and other collaborations helped build the County Board, the staff and the public's trust in the IWLA member's scientific credibility and civic-mindedness.

The Izaak Walton League of America (IWLA) is well positioned to perform public services for federal, state and local units of government in the furtherance of mutual conservation goals. The League is a nation-wide, grassroots conservation organization that just celebrated its 100-year anniversary in 2022. Its chapter's membership includes veteran conservation, natural resource, medical, pollution control and scientific research professionals and other volunteers, many who are current, retired or former natural resource agency, university or consulting firm employees. And many are skilled, self-taught citizen scientists as well. Learn more about the League at: https://www.iwla.org/ .