Town of Sterling Polk County, Wisconsin

Moratorium on Livestock Facility Licensing ~ Committee Report

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Moratorium on Livestock Facility Licensing Report

July 26, 2021

This report was completed to meet the purpose of the Town of Sterling Ordinance 19-0916: Moratorium on Livestock Facilities Licensing. It includes information presented to the Livestock Facility Licensing Study Committee or researched by its members.

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1. Report Summary

Introduction
In early 2019, residents in the Town of Sterling learned that developers were planning to build a large swine facility. Several landowners were approached to sell parcels to Cumberland LLC, a Wisconsin company set up by an Iowa Corporation that manages swine operations in Iowa and Minnesota.

In March 2019 a preliminary application for permits to build a farrowing plant with up to 26,000 hogs was submitted. Cumberland submitted final application in May 2021.

Concerns were presented at the June 2019 Sterling Town Board Meeting, and at subsequent meetings, residents encouraged the board to pass a moratorium to study the issue. After consulting with an attorney, the Sterling board voted in September to pass a 12-month moratorium on large livestock facilities. Committee meetings were not scheduled for several months due to the Covid-19 pandemic, and the Sterling board voted to extend the moratorium until October 2021.

This report attempts to meet the purpose of the moratorium. It is a group product and includes contributions from committee members. Each section begins with a brief introduction and description of concerns.

Purpose
Study, review, consider and determine whether the creation of a Livestock Facilities Licensing Ordinance or other ordinances are required to protect the environment, water quality, public health or safety and property in the Town of Sterling. *(Language from Moratorium Ordinance 19-0916, September 2019)*

Laws and Regulations – Concerns

- The Town of Sterling does not have a Comprehensive Plan.
- The Town of Sterling is un-zoned.
- Existing farms are concerned that additional permits would be needed for expansion.
- A (new) livestock ordinance or lack thereof, may cost taxpayers money if challenged.
- Polk County passed a large livestock ordinance in 2019 that does not cover un-zoned areas in Sterling. The ordinance does not allow large livestock facilities to build in Shoreland Protection areas, it does allow manure to be spread in shoreland areas up to 25 feet of surface water.
- Two towns near Sterling – Trade Lake and Eureka – require facilities with 1,000 of more animal units to obtain an operations permit.
- Current county and state permit applications do not account for local variations in soil, geology, watershed characteristics or special environmental conditions.
- Federal, state and county laws oversee how waste produced by large livestock facilities is stored and spread. These laws and regulations are meant to minimize the risk of pollution of surface and ground water, yet they are poorly enforced.
- There are no laws/ regulations that address odor, air quality, noise, and traffic.
- There are no laws / regulations that protect property values or health impacts of pollution.

Environmental and Health Impacts – Concerns

- All residents of Sterling rely on drinking water from private or shared groundwater wells.
- There is no long-systemic testing program for private wells by Polk County or the State.
- Published data indicates that private and public wells are already polluted by nitrates, phosphorus, and bacteria from sources such as, private septic systems, sewer plants, urban and agricultural run-off.
- Private wells polluted with nitrate only qualify for state cleanup grants if pollution is four times the safe drinking standard and the water is also used for agriculture.
- Phosphorus pollution of surface water already impacts Sterling and the St. Croix River.
- Large-concentrated livestock operations can emit hazardous chemicals and particulates including ammonia, hydrogen sulfide and dust in quantities larger than smaller livestock operations.
- Numerous types of research identify the negative environmental and health effects of CAFOs.
- Exposure to air pollutants and daily use of contaminated water can cause serious health issues.
- There is no regulation of air pollution that CAFOs create.
- Psychological impacts of odor curtail social activity, quality sleep and overall wellbeing.

Safety Impacts – Concerns

- Increased heavy truck traffic and potential damage to local roads.
- High numbers of semis hauling livestock increases the danger of (serious) crashes.
- Large buildings filled with thousands of animals complicates fire / rescue response.
- Infectious human and animal disease makes the large livestock system especially vulnerable.

Economic Impacts – Concerns

- A large portion of Sterling's tax revenue is forest / recreational land, and rural residential property.
- Large livestock facilities often lower property values and could impact Sterling's tax base.
- Large livestock facilities can depress economic activity in surrounding communities.
- Existing farmers may need better economics of scale and do not want their growth to be restricted.
- Agriculture and trade policies benefit highly capitalized operators instead of smaller operations.
- Local taxpayers may bear CAFO costs such as permitting, road maintenance and pollution cleanup.
- Land identified as agricultural or recreational near water is sold for residential development.

Potential Options for Board Action

1. Develop a Comprehensive Management Plan for the Town of Sterling.
   An approved / adopted Comprehensive Plan would serve as local guide for community physical, social, and economic government. The plan provides rational basis for local land use decisions with a vision for future planning. Generally, towns do a 20-year plan, reviewed after 10 years. Polk County Planner, and other State agencies and professionals can assist with this process.

2. Adopt Polk County Zoning
   County has authority to regulate land use through zoning. The Comprehensive Land Use Ordinance 37-20 adopted September 2020, currently allows CAFOs in A-2 zones.

3. Establish Township Zoning – or Regulatory Ordinances
   Locally established zoning districts specify what land uses are allowed. Township zoning ordinances can help regulate / site large livestock facilities. These ordinances cannot be more restrictive than the State of Wisconsin – unless town establishes reasonable and scientific findings, that more restrictive regulations are necessary to meet current water quality standards or to protect identified sensitive areas.

4. Adopt CAFO Operations Ordinance similar to Town of Eureka and Town of Trade Lake.
   These ordinances regulate operation of the facility. An Operations Ordinance requires applicant to have sufficient funds for pollution clean-up, nuisance abatement, and proper closure of the operation if it is abandoned or ceases to operate. Not based on siting / zoning, and Sterling could partner with neighboring townships located in the same watershed district.

The following suggestions could be used during decision process:

- Develop option with input from and in consultation with farmers and community members.
- Protect farmers who are engaged in good practices to extent required.
- Recognize standards may be different depending on facility size, livestock type and operation.
- Focus on protecting water quality and quantity, public health and safety while preventing pollution, and nuisance concerns from neighbors.
- Consider geology, susceptibility for ground water and surface water contamination.
- Create conditions for safe / sustainable operations that are in the interest of Sterling residents.
- Develop an evaluation plan for continued monitoring of the option implemented, to evaluate overall effectiveness along with any unintended consequences.

Agriculture is a significant aspect of the rural atmosphere and economy of Sterling, and the surrounding community. It is important to maintain a supportive and trustful climate for livestock operations to thrive and succeed. The Town of Sterling Large-Scale Livestock Study Committee would like any new regulations to value and support established agriculture

2. Introduction

In Spring of 2019, residents in the Town of Sterling and neighboring towns learned that developers were in the planning stages to build a large swine facility in Burnett County. Several area landowners were approached to sell parcels to Cumberland LLC, a Wisconsin company set up by Suidea, an Iowa corporation that manages swine operations in Iowa and Minnesota.
Cumberland LLC secured a purchase agreement for a 38-acre site in the town of Trade Lake.
They completed a preliminary application for County and State permits in March 2019.
The proposed facility, submitted a final permit application in May 2021. According to the application(s), the farrowing facility would house up to 26,000 hogs, in three large barns. Additional facilities, at different sites in the surrounding area will be needed to fatten an estimated 200,000 piglets born at the CAFO in Trade Lake.

The US Environmental Protection Agency defines a Concentrated Animal Feeding Operation (CAFO) as agricultural enterprises where animals are kept and raised in confined situations.

CAFOs concentrate animals, feed, manure, urine, deceased animals, and production operations on a small land area. Feed is brought to the animal, rather that the animals grazing or otherwise seeking feed in pastures, fields or on range lands.

Livestock feeding operations with 1,000 or more animal units are CAFOs.
An animal unit (AU) is a unit of measure to equalize different species of livestock into a uniform number for permitting purposes.

Each animal type has as AU measure per individual animal in Wis. Statute NR 243.11.
Example ~ 1,000 beef cattle, 715 milking cows, 2,500 swine-weighing more than 55 lbs., 55,000 turkeys and 200,000 chickens are each equivalent to 1,000 animal units.

Concerns about the pending Trade Lake CAFO were presented during public comment during the June 2019 Sterling Board meeting. The proposed facility would be located adjacent to the town of Laketown, approximately 10 miles from NE Sterling Township. During subsequent board meetings, Sterling residents encouraged board members to pass a moratorium to study this complicated issue. After consultation with an attorney, in September 2019, the Sterling board voted to establish a 12-month Moratorium Ordinance on Livestock Facilities Licensing.

There are no permitted CAFOs located in the town of Sterling, however, there are five permitted CAFOs in Polk County ~ 4 dairy and one turkey.
In surrounding counties: There is one permitted (dairy) CAFO in Burnett County,6 (dairy) CAFOs in St. Croix County, and 5 CAFOs in Barron County ~ 4 dairy and one turkey.

The number of CAFO permits is on the rise throughout the state of Wisconsin, with a 235% increase in facilities since 2000. Currently there are approximately 300 CAFOs in Wisconsin, and more than 450,000 in the United States.

3. Purpose

The moratorium allows the town of Sterling time to study, review, consider and determine whether the creation of a Livestock Facilities Licensing Ordinance or other ordinances are required to protect the environment, water quality, public health /safety and property in the Town of Sterling.

After the moratorium was imposed and according to the ordinance, the Sterling board formed a Large-Scale Livestock Facilities Study Committee. The committee shall, during the moratorium, research, analyze and synthesize scientific literature regarding the impact of large-scale livestock facilities on ground water, surface water and air quality, as well as impacts to property and infrastructure and the health, safety, and welfare of residents specifically as those issues apply in the Town of Sterling. (*Language from Moratorium Ordinance 19-0916, Sept. 2019)*

Committee: appointed during October 21st, 2019, Board Meeting

- Ben Lundgren (served on committee Oct. 2019 – Feb. 2021)
- Allysse Sorensen
- Marcia Marquardt
- Keith Ward – Sterling Town Supervisor

This report is informal and was completed to meet the purpose of the town of Sterling moratorium on livestock facilities licensing. The report is a group product and includes contributions from committee members. The report does not represent the views of any individual member.
The intent is to present information as a resource for elected officials and citizens to determine appropriate next steps concerning CAFOs in the town of Sterling.

Gathering information for this report, the Livestock Facilities Study Committee researched facts and data through literature review, presentations by experts, and discussion with other township study group members. The committee utilized findings to draft recommendations / options that the town board could act on or use to guide decision-making to address issues identified in the findings.

The town of Sterling has a variety of unique characteristics to consider while researching the many complicated layers regarding CAFOs.

The committee, identified key concerns and researched the following topics:

- Laws and Regulations regarding CAFOs
- Environmental and Health Impacts
- Safety Impacts
- Economic Impacts
- Options for Board Action

4. Laws and Regulations

Concerns -

- The Town of Sterling does not have a Comprehensive Management Plan.
- The Town of Sterling is un-zoned.
- Existing farms are concerned that additional permits would be needed for expansion.
- A (new) livestock ordinance or lack thereof, may cost taxpayers money if challenged.
- Polk County passed a large livestock (siting) ordinance in 2019 that does not cover un-zoned areas in Sterling. The ordinance does not allow large livestock facilities to build in Shoreland Protection areas, it does however, allow manure to be spread in shoreland areas up to 25 feet of surface water.
- Two towns near Sterling - Trade Lake and Eureka – require facilities with 1,000 or more animal units to obtain an operations permit.
- Current county and state permit requests / applications do not account for local variations in soil conditions, geology, watershed characteristics, special environmental conditions.
- Federal, state and county laws oversee how the waste produced by large livestock facilities is stored and spread. These laws and regulations are meant to minimize the risk of pollution of surface and groundwater, yet they are (at times) poorly enforced.
- There are no laws / regulations that address odor, air quality, noise or traffic.
- There are no laws / regulations that protect property values or health impacts of pollution.

Laws are passed by elected officials. When a law is passed, governmental agencies develop rules that regulate facilities covered by the law. A series of town, county, state and federal laws and regulations can potentially apply to large livestock facilities. The following is an overview of existing laws and regulations and how they may (or may not) apply to large livestock facilities in the Town of Sterling.

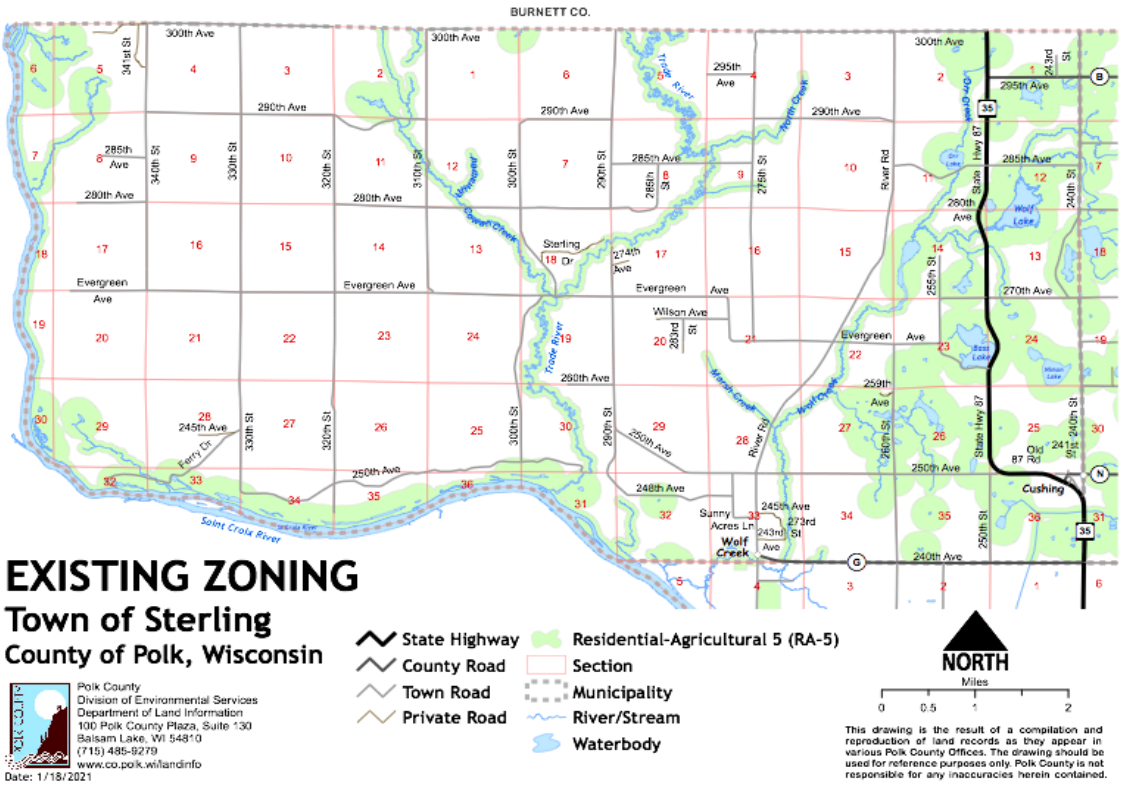
A. Town of Sterling

Sterling is un-zoned - one of 5 townships in Polk County.
Land that is un-zoned is, by definition, not (yet) subject to zoning restrictions.
That does not mean that other laws do not apply.
Without a Comprehensive Management Plan – the town residents and Board have not established a guide or vision regarding physical, social, and economic development.
Beginning January 1, 2010, if a town, village, city, or county enacts or amends an official mapping, subdivision, or zoning ordinance, the enactment or amendment ordinance must be consistent with (that community's) comprehensive plan.

Comprehensive Land Use Ordinance - There are 24 towns in Polk County. Sterling is one of five Polk County towns that have not adopted zoning under this ordinance.
This means that this zoning ordinance does not apply here.

Shoreland Protection Zoning Ordinance - While Sterling has not adopted zoning, under Polk County's Comprehensive Land Use Ordinance, approximately 30% of the Town is covered under the county's Shoreland Protection Ordinance. These regulations help ensure the proper management and development of the shoreland of all navigable lakes, ponds, rivers, and streams in the unincorporated areas of Polk County.

The following map shows Existing Zoning in the Town of Sterling.



Please note: On this map and all Town of Sterling (County of Polk, WI) maps included in this report – State Highway 87 is mis-labeled as State Highway 35.

B. Polk County

In February 2020 Polk County passed Resolution 03-20, withdrawing swine CAFOs as a potential conditional use in some areas. Swine CAFO buildings cannot be developed in areas that are shaded green, as indicated on the Existing Zoning Map of Sterling. However, manure from CAFOs can still be spread in some shoreland zoned areas throughout the county.

Polk County Swine CAFO Amendment - page 29, of the Comprehensive Land Use Ordinance – Passed September 15, 2020, this amendment focus is on siting and effectively targets development in towns with areas zoned Agriculture-20 and non-shoreland lands in un-zoned towns such as Sterling.

CAFO facilities with 2,999 hogs or less (1,000 animal units) in zoned towns also have no restrictions. Developers interested in non-shoreland areas of Sterling have no county siting restrictions. And manure from CAFOs in un-zoned areas can be spread in shoreland areas throughout the county.

Developers planning facilities to house more than 2,999 hogs (1,000 animal units) in zoned towns must be in areas zoned Ag-20. In addition, they are required to get a conditional use permit (CUP) through the county's Environmental Services Committee that will include at least the following provisions:

- **Setbacks** – 200 feet setbacks for waste storage and housing for an infinite number of animals. 100 feet setback for driveway entrance.
- **Waste** – Requires nutrient and mortality management plans.
- **Overweight Loads** – Requires town approval during road restrictions.
- **Spills** – Facility shall notify the town and county of spills within 24 hours. The county will publicly notice the spill.
- **Previous violations** - violations by owner/parent company must be reported.
- **Suspected hazards** – Environmental or human health hazards must be referred to the county.
- **Residency** – Owner or operator must live within five (5) miles of the development.
- **Plans** – Professionally designed and drafted plans are required for the main facility.

This swine CAFO ordinance was designed during a 12-month moratorium that required the county to study a wide range of environmental and health issues. Wisconsin Law require ordinances be based on "reasonable and scientifically defensible findings." The ordinance was incomplete and was submitted to DATCP without providing sufficient findings. DATCP staff replied to the county, that the ordinance is vulnerable to legal challenge.

Manure and Water Quality Management Ordinance –
Permits are required for construction, alteration, or closure of any animal waste storage structure on non-CAFO farms. Construction needs to meet Natural Resources Conservation Service (NRCS) engineering standards whether in zoned or un-zoned town such as Sterling. Unconfined manure piles are not allowed within 1,000 feet of navigable lake or pond; 300 feet from a river or stream; 250 feet from a private well, 1,000 feet from a municipal well; 100 feet from downslope to groundwater; shallow soils over groundwater or bedrock. Adequate sod must be maintained in pastures where livestock have access to water. Manure management plans are required for cost sharing.
Plans focus on phosphorus - not nitrates, bacteria or other pollutants.
These plans do not require land ownership or contracts.

Erosion Control and Storm Water Management Ordinance –
Plans must be completed and approved before construction begins. Site-specific construction plans are reviewed, and must be designed, installed, and maintained to meet NR 151 performance standards, as well as local ordinances and regulations.
Water must go down into the soil not across into surface waters too quickly.

C. State of Wisconsin

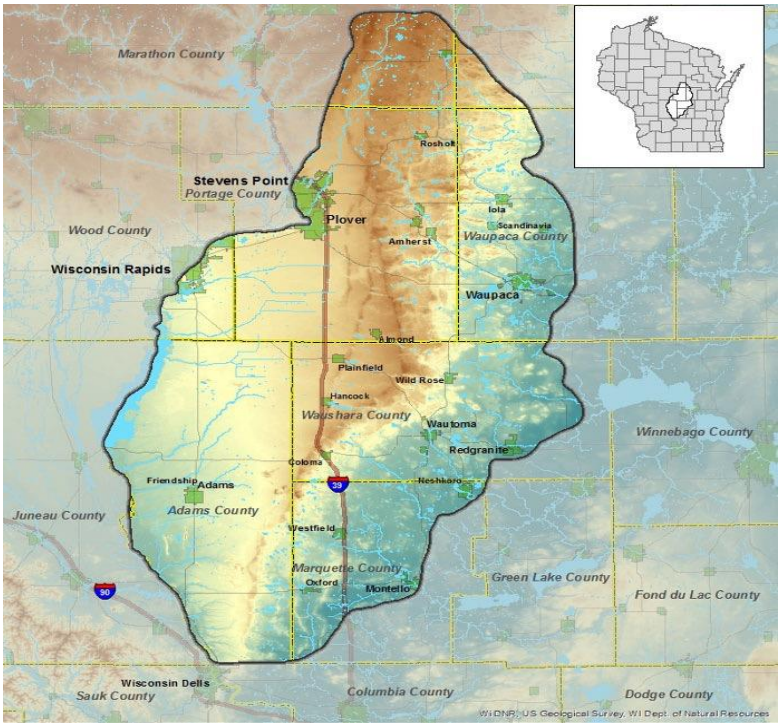
Wisconsin Department of Natural Resources (DNR) - In addition to federal laws for which the DNR has authority; there are several state statutes and rules that may or may not be related to CAFOs:

- Runoff Management Rules NR 151 -
  Regulates use of manure and fertilizer for non-CAFO farms. In December 2019, the DNR board voted to begin crafting new rules to curb nitrate pollution in drinking water.

- Local Regulation of Livestock Wisconsin Statute 92.15 –
  Used as the basis for the towns of Trade Lake CAFO Operations Ordinance and Town of Eureka CAFO Operations Ordinance. These ordinances focus on how the facilities are operated, instead of siting, and are based on local government powers instead of siting laws. These ordinances include performance bonds and yearly renewal. The Eureka and Trade Lake ordinances are based on Bayfield County's ordinance which was challenged by the DNR in 2017 but was upheld in court. There is a review process of these ordinances by Wisconsin agencies. DATCP reviewed Polk County's DRAFT Operations Ordinance in October 2020 memo.

- Air Toxics Rule NR 445 - Toxic Air pollution from CAFOs is not currently regulated. However, livestock farms may potentially be required to meet air emission standards for hydrogen sulfide and ammonia under the DNR air toxics rule.

- High-Capacity Wells NR 812 – DNR approval is required for CAFOs when the combined pumping capacity of all wells on a farm exceeds 100,000 gallons a day or 70 gallons per minute. There are 89 high-capacity wells in Polk County. Five are at permitted CAFOs and another 27 are used for irrigation and other agricultural activities.



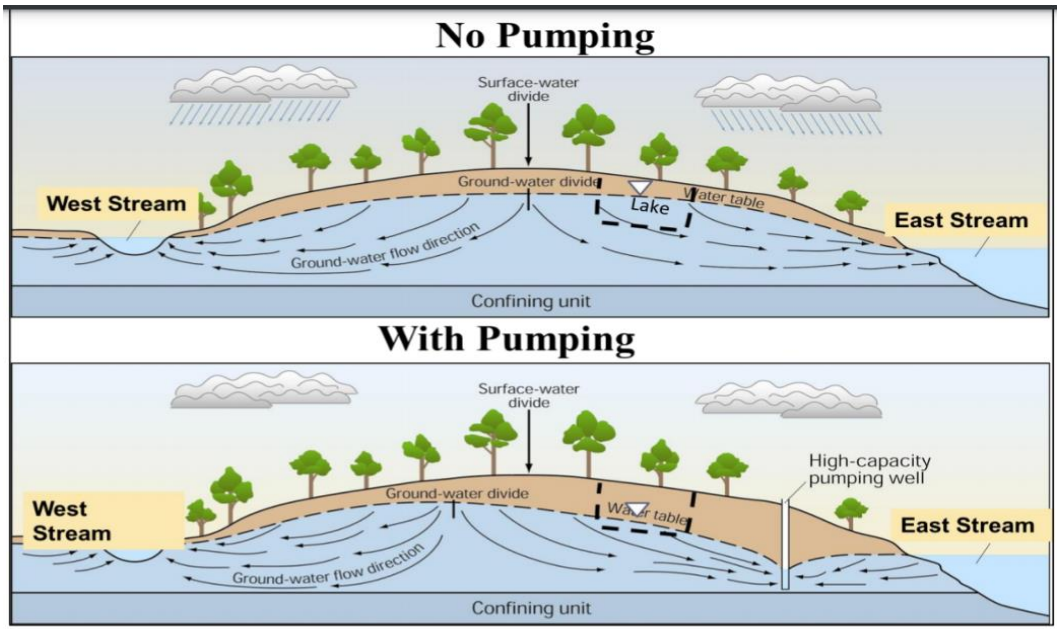
The impact of high-capacity well usage is a highly debated issue. In June 2020, Attorney General Kaul ruled that DNR must review high-capacity well applications for environmental impacts to local wells, springs, lakes, and rivers when issuing new permits.
The Wisconsin Supreme Court affirmed Kaul's ruling in a June 2021 decision.

In 2017, the DNR began studying the impact of high-capacity wells in Wisconsin's Central Sands area after several water bodies were impacted by huge withdrawals of water. This is the most prominent, but not the only, area of Wisconsin where lakes, streams and wetlands have been diminished by groundwater pumping.

Findings from this study and others may impact high capacity well use throughout Wisconsin.

In the following diagram –

Groundwater flow system is shown under natural conditions – No Pumping and pumping conditions – With Pumping. Note that the lake is a dip that extends below groundwater levels. The pumping well intercepts water that is going to the East Stream, and also captures some of the water from the West Stream. Because pumping lowers water levels in the aquifer, lake levels have declined.
When high-capacity wells are located near a stream, the flow of groundwater might be reversed.



Source: Wisconsin's Greenfire – High Capacity Well Impacts

WI Department of Agriculture, Trade and Consumer Protection (DATCP)

- Livestock Facility Siting and Expansion Wisconsin Statute 93.90 – Passed in 2006, local governments must adopt authority for siting using either licensing or zoning with conditional use permits. There is no authority in Sterling because statute 93.90 has not been adopted.

- Livestock Facility Siting Rule ACTP 51 - This is the rule for 93.90. It defines the details such as setbacks, air pollution, nutrient and runoff management, and waste storage. An attempt to revise the rule was stopped in November 2019. This rule does not apply to Sterling. However, DATCP is currently assessing the legality of a $1,000 limit on application fees and a prohibition on performance bonds in ACPT 51.30(4)(a)&(b). As part of Act 21, Wisconsin Statute 227.10, DATCP was required to review all rules and make sure there is authority in the statute to back it up. According to both the Wisconsin Towns Association and County Association, both items lack express authority in statute and are unenforceable.

D. United States Federal Laws and Regulations

Clean Water Act (CWA) – Passed in 1972 under President Nixon. While it is a Federal Law, authority or implementation and enforcement is granted to Wisconsin Department of Natural Resources (DNR).

The goal of the CWA is to protect the nation's water by setting standards for water quality and regulating pollution discharges into water. Two of its programs specifically apply to large livestock facilities. These are the Wisconsin Pollution Discharge Elimination System (WPDES) and Total Maximum Daily Load (TMDL) programs.

WPDES Permit Program - The DNR issues WPDES permits to regulates the discharge of pollutants to waters of the state. Permits are issued – for a five-year term - to a wide range of municipal and industrial facilities, including CAFOs that discharge (pollutants) to surface water and/or groundwater. These wastewater permits contain the monitoring requirements, special reports, and compliance schedules appropriate to the facility.

The DNR is responsible for ensuring that Wisconsin's approximately 319 large livestock facilities – Concentrated Animal Feeding Operations (CAFOs) are complying with the terms of WPDES permits. Rules for the permits are under Chapter NR 243 of Wisconsin's Administrative Code.

DNR staff has summarized the program in the following chart.

CAFO ~ WPDES Permits

- Requirements outlined in ch. NR 243, Wis. Adm. Code
- Water quality protection permits
- Regulates CAFO manure and process wastewater handling, storage and land application
- Does not regulate air, odor, animal waste, noise, or traffic issues
- **NOT** a siting program
- Does not implement local (town/county) requirements

These permits:

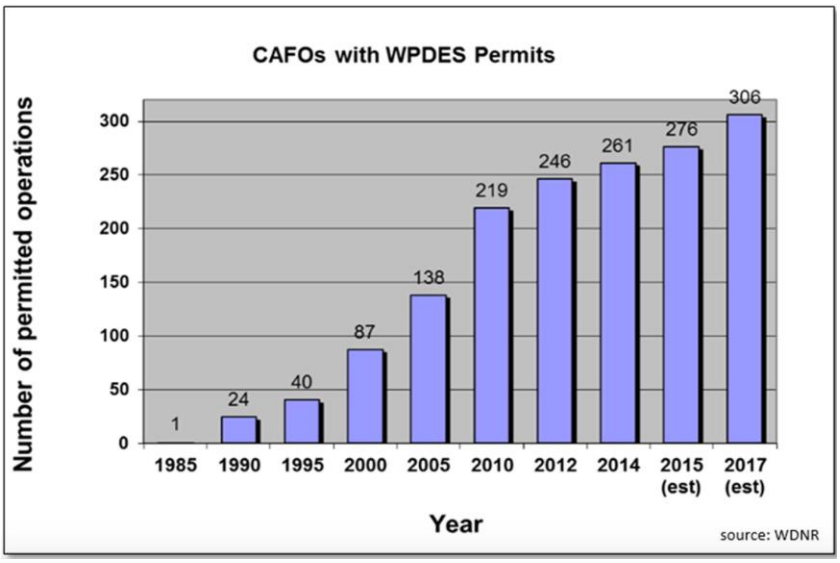
Place limits on the type of and concentration of water pollutants that may be discharged
Require ongoing self-monitoring and reporting and,
Establish requirements for manure collection and land application procedures.

Ninety percent (90%) of the Wisconsin CAFO permits are held by dairy operations.

The DNR struggles to keep up with the growth of CAFOs in Wisconsin.
In 2005 there were 138 CAFOs, and today there are over 300 permitted CAFOs, an increase of 235%.

For example, a 2016 study by the Legislative Audit Bureau of the WPDES program, found that one-third of CAFOs were operating under expired permits. In 2020 there were 91 CAFOs or 28% operating under expired permits. For many years, inspection goals were being met for fewer than half of the sites.

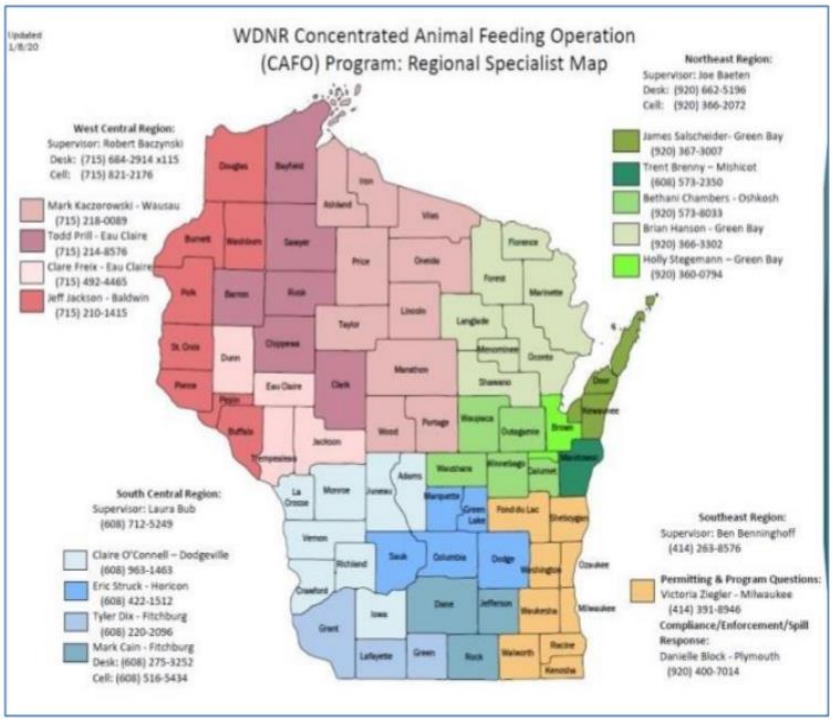
There are five permitted CAFOs in Polk County, 4 dairy and one turkey.
Two are operating with expired permits



DNR Regional specialists are responsible for: drafting permits; public notice of the permit; responding to questions / concerns regarding the permit; and permit issuing or reissuing. Other responsibilities of the Regional Specialist include onsite compliance inspections of the production area and /or land application sites.

Sterling is in the West Central Region – an area serviced by DNR regional specialist, Jeff Jackson.

Located in Baldwin, WI – J. Jackson is responsible for eight counties. Covering a distance of 245 miles, from Douglas County on Lake Superior to Buffalo County on the Mississippi River, as seen in the dark salmon section on the map.



Engineering staff, located in Madison, serve the entire state. They review; engineering evaluations of structures; engineering plans and specifications of proposed structures/ and the "days of waste storage calculations."

There are also staff in Madison who review the Nutrient Management Plan (NMP) every five years. This involves determining waste generation and reviewing how the farm plans to manage land application activities. This helps determine is the operation has adequate land base for their calculated waste generation.

No case better illustrates the challenges with CAFO permitting, inspections, compliance, and enforcement than Emerald Sky Dairy, located near Baldwin in St. Croix County. Emerald Sky Dairy (owned by a Nebraska Company) had five known manure violations in three years. The worst was a 2017 spill of 275,00 gallons that resulted in a fine of $ 80,000. Two years later, an anonymous call reported manure flowing down a ditch that dumped into Hutton Creek. DNR staff documented manure was flowing into the creek and evidence of dead fish. St. Croix County Development Corporation sent a letter to the DNR on February 20, 2020, demanding a "full and quick" enforcement of manure application rules and statues for CAFOs located in St. Croix County.

Managing Mortalities

It is important that facilities plan for typical and catastrophic morality situations and manage to prevent serious health and environmental risks. It is common for hog operations to manage their mortalities by operating a composting facility. Burial is a common way for disposal, however some states outlaw it. Sites with high water table and sandy soil, do not allow proper depth or cover for burial without risk of contamination to groundwater, and if not managed properly, may pose additional risks through the spread of disease and other environmental contamination.

If an operation, in Wisconsin uses this method to manage moralities, the facility will require an engineering evaluation (if it is an existing facility) or engineering plans and specifications (if it is a proposed facility) to determine the farm's ability to comply with s. NR243.13 and s. NR245.15, Wis Admin. Code. Some choose to have custom haulers transport mortalities to a rendering facility or a land fill. Ultimately, all permittees are required to record the date and method of carcass disposal.

All farms, regardless of size, must manage carcasses in compliance with state law that prohibits carcass placement in any stream, or lake, and strictly limits the time a carcass may be left accessible to dogs or wild animals. Wisconsin DNR provides a helpful Facilities and Systems Checklist and following Best Management Practices (BMP) may also minimize health and environmental risks.

Lake St. Croix TMDL Program

The DNR strives to reduce phosphorus pollution to the St. Croix River. Sterling is in the 7,760 square mile area that feeds water to the St. Croix River. Under the Clean Water Act, states must identify surface waters, lakes, marshes, rivers, and streams that are not meeting state water quality standards and put them on the impaired waters list. Lake St. Croix, near Hudson was placed on the impaired list in 2008 due to excess phosphorus pollution in the St. Croix River.

After Lake St. Croix was listed as impaired, Wisconsin and Minnesota calculated that the Total Maximum Daily Load (TMDL) of phosphorus that could go into the lake is 360 metric tons.

To reach a phosphorous pollution reduction goal of 127 tons or 28%, communities and landowners in the St. Croix Watershed need to reduce discharges from sewer plants and runoff from urban and agricultural land.

The Clean Water Act (CWA) provides states and local governments with federal resources to meet these goals. For instance, Polk County receives funding for the following programs that are or could be implemented in Sterling.

Nutrient Management Plans – County staff review and/or help draft nutrient management plans for CAFOs and smaller farms.

Farmer-Led Watershed Councils –
Made possible by partnerships between agricultural producers, County Land and Water Conservation Departments, DATCP, and the University of Wisconsin – Extension, there are four (4) active watershed councils in northwest Wisconsin counties. The goal is to develop farm leaders on a local watershed scale to increase use of conservation practices that improve water quality and soil health. Figuring out how to keep vegetative cover and living roots on the fields during fall, winter and spring is a key conservation practice these councils promote. These cover crops help more water infiltrate the soil and less run off the field. Cover crops also take up excess nutrients left after the growing season and keep them in the field, minimizing nutrient loading to surface waters.

Horse Creek Farmer-led Watershed Council –
operates a 76-square mile watershed located in southern Polk County. The council has been successful in implementing and promoting practices that improve soil health and water quality. They have shared their successes, and challenges, statewide with other potential watershed councils. In 2013, the Horse Creek WSC was instrumental in helping the state to re-direct $250,000 of funding within DATCP toward expanding councils statewide.
Today, the grant initiative makes $750,000 dollars available to agriculture producer groups who would like to organize similar programming. Twenty-seven watershed groups in our state were approved for this funding in 2020.

Lake Protection Grants - There are nearly 400 Lake Associations in Wisconsin. While there are no Lake Associations in Sterling, residents are none the less, interested in and committed to the organizations purpose: to maintain, protect, and improve the quality of the lake, its fisheries and watershed. Qualified associations (or groups) are eligible for moneys through specific grant programs.

Safe Water Drinking Act (SWDA) –
Passed in 1974 under President Ford. SWDA sets standards for public drinking water systems. These standards, however, do not apply to private wells. There are no state or federal laws that require existing private wells to be tested for contaminants.
All of Sterling's drinking water comes from private wells.

Under the SWA, the safe limit for nitrate in water is defined as 10 parts per million (PPM). The 10-ppm limit was set in 1962 and is based on studies from the 1940s. There are questions whether a 59-year-old limit can still be scientifically justified. Some say new evidence could show that the limit should be higher – others think it could be lower. CAFOs are not covered by the SWDA.

Clean Air Act (CAA) - Passed in 1990 under President Bush. CAA sets air quality standards for (just) six pollutants from industrial plants. The Wisconsin DNR is also granted authority to identify sources of pollution and issue permits to control them. At this time, CAFOs are not considered to be industrial polluters and are not covered by the Clean Air Act.

Emergency Planning and Community Right-to-Know Act (EPCRA) –
Enacted in1986 under President Reagan after thousands of people were killed in India by a chemical explosion. The law required CAFOs to report chemical pollution such as ammonia and hydrogen sulfide from animal waste when it was in amounts that could threaten public safety.

In 2008, under President Bush, animal feeding operations were exempted from having to report air pollution from animal waste. After legal action in 2017, that exemption was struck down by the U.S. Court. Then in 2018, under President Trump, the Fair Agricultural Reporting Method Act again exempted CAFOs. Final rules were made public in July 2019.

Toxic Air Pollution Regulation -
There is no toxic air regulation of CAFOs. However, there is an on- going, 15-year attempt by the US Environmental Protection Agency (EPA) to regulate CAFO air pollution using scientifically sound methods. It is complex because air pollution varies depending on factors such as the number and type of animal confined, type of feed, manure handling / storage practices, barn ventilation methods and climate. Directly measuring air pollution is expensive.

In 2007, dairy, swine and chicken plants participated in a program to monitor pollution at 25 sites in nine (9) states. The purpose was to collect the data needed to develop models that can estimate pollution and determine how CAFOs should be regulated under the Clean Air Act and Emergency Planning and Community Right-to-Know Act. A DRAFT report was issued in 2012. Draft models for ammonia, hydrogen sulfide and particulate matter pollution were due to be completed in 2020 for swine, chicken and dairy plants. The DRAFT Swine Model was released in August 2020, and models for poultry and dairy were scheduled for this year.

Summary of Laws and Regulations		
Sterling Regulation	**Type of Regulation**	**Regulating Agency**
Shoreland Protection Zoning Ordinance	Proper management & development of shoreland of lakes, ponds, rivers, streams	Polk County Zoning
Polk County Regulation	**Type of Regulation**	**Regulating Agency**
Comprehensive Land Use Ordinance	CAFOs currently allowed in Ag-2 zones and in 5 un-zoned towns including Sterling	Polk County Zoning
Shoreland Protection Zoning Ordinance	Covers approx. 25% of Sterling. CAFO facilities not allowed but manure can be spread.	Polk County Zoning
Manure & Water Quality Management Ordinance	Manure managed under NRCS cost sharing for non-CAFO farms.	Polk County Land and Water
Storm Water Management & Erosion Control Ordinance	Construction plans reviewed for water and erosion	Polk County Land and Water
Wisconsin State Law or Regulation	**Type of Regulation**	**Regulating Agency**
Runoff Management Rules (NR 151)	Manure and fertilizer rules for farms smaller than CAFOs	DNR
Local Regulation of Livestock Law (92.15)	Local ordinances may exceed state performance standards if shown to protect water quality. Eureka ordinance is based on this.	DNR or DATCP
Air Toxics Rule Regulation (NR 445)	Potential regulations of Hydrogen sulfide and ammonia. Not currently required for CAFOs	DNR
High-Capacity Wells (NR 812)	Required when pumping more than 70 gallons per minute of water.	DNR
Livestock Siting and Expansion Law (93.90)	Local governments can adopt authority for siting. No authority in Sterling	DNR
Livestock Facility Siting Rule (ACTP 51)	Rule if 93.90 authority is adopted. Setbacks, air pollution, nutrient and runoff management, and waste storage.	DATCP
United States Federal Law or Regulation	**Type of Regulation**	**Regulating Agency**
Clean Water Act - 1972	Water pollution (WPDES) permits NR 243 rules. Lake St. Croix TMDL drive nutrient management plans, Farmer-Led Watershed Councils.	Implementation and enforcement authority delegated to the DNR.
Clean Air Act - 1990	Criteria pollutants – carbon monoxide, lead, ground-level ozone, nitrogen dioxide, particulate matter, and sulfur dioxide. Not currently required for CAFOs.	Implementation and enforcement authority delegated to the DNR
Emergency Planning and Community Right-to-Know Act - 1986	Chemicals released to the air, land or water. Not currently required for CAFOs.	Implementation and enforcement delegated to the DNR
Air Pollution Models - 2007	Ammonia, hydrogen sulfide, particulates and volatile organic compounds. Not currently required for CAFOs.	US Environmental Protection Agency

5. Environmental and Health Impacts

Statements from 2009–2029 Polk County Management Plans, indicate a commitment and priority to guard and maintain the county's resources.

"Protect the quality of the land, lakes, rivers, wells and air" - Polk County Comprehensive Plan

"Preserve, protect, and enhance surface water, groundwater, land and community resources present in the county" - Polk County Land and Water Resource Management Plan.

This section reviews findings on CAFOs impacts to land, groundwater, surface water and air. Scientific research shows that large livestock facilities pose a range of potential vulnerabilities to natural resources and public health, and there are concerns regarding these potential threats.

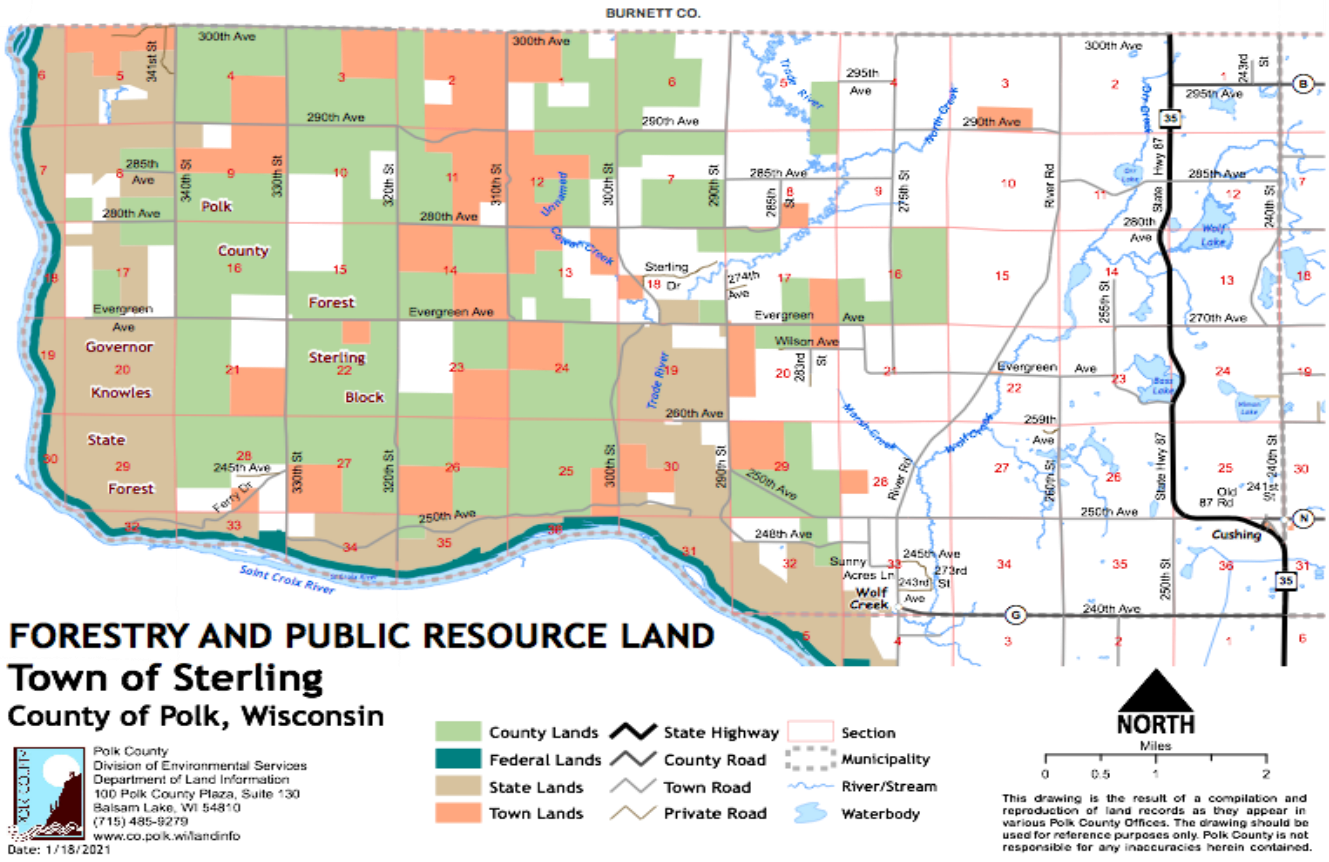
Concerns

- All residents of Sterling rely on drinking water from private / or shared groundwater wells.
- There is no long-term systematic testing program for private wells by Polk County or the State.
- Published data indicates that private and public wells are already polluted by nitrates, phosphorus, and bacteria from sources such as, private septic systems, sewer plants, urban and agriculture runoff.
- Private wells polluted with nitrate only qualify for state cleanup grants if pollution is four times the drinking standard and the water is also used for agriculture.
- Phosphorus pollution of surface water already impacts town of Sterling and the St. Croix River.
- Diseases, pathogens, and pollutants that are detrimental to public health can be transmitted or spread in a variety of ways.
- There is a large volume of research identifying the negative environmental and health effects of CAFOs.
- Concentrated livestock operations can emit hazardous chemicals and particulates including ammonia, hydrogen sulfide and dust in quantities larger that smaller livestock operations.
- Exposure to air pollutants and daily use of contaminated water can cause serious health conditions.
- There is no regulation of the many types of air pollution that CAFOs create, and monitoring air quality and odor is difficult and expensive.
- Psychological impacts of odor curtail social activity, quality sleep and overall wellbeing.

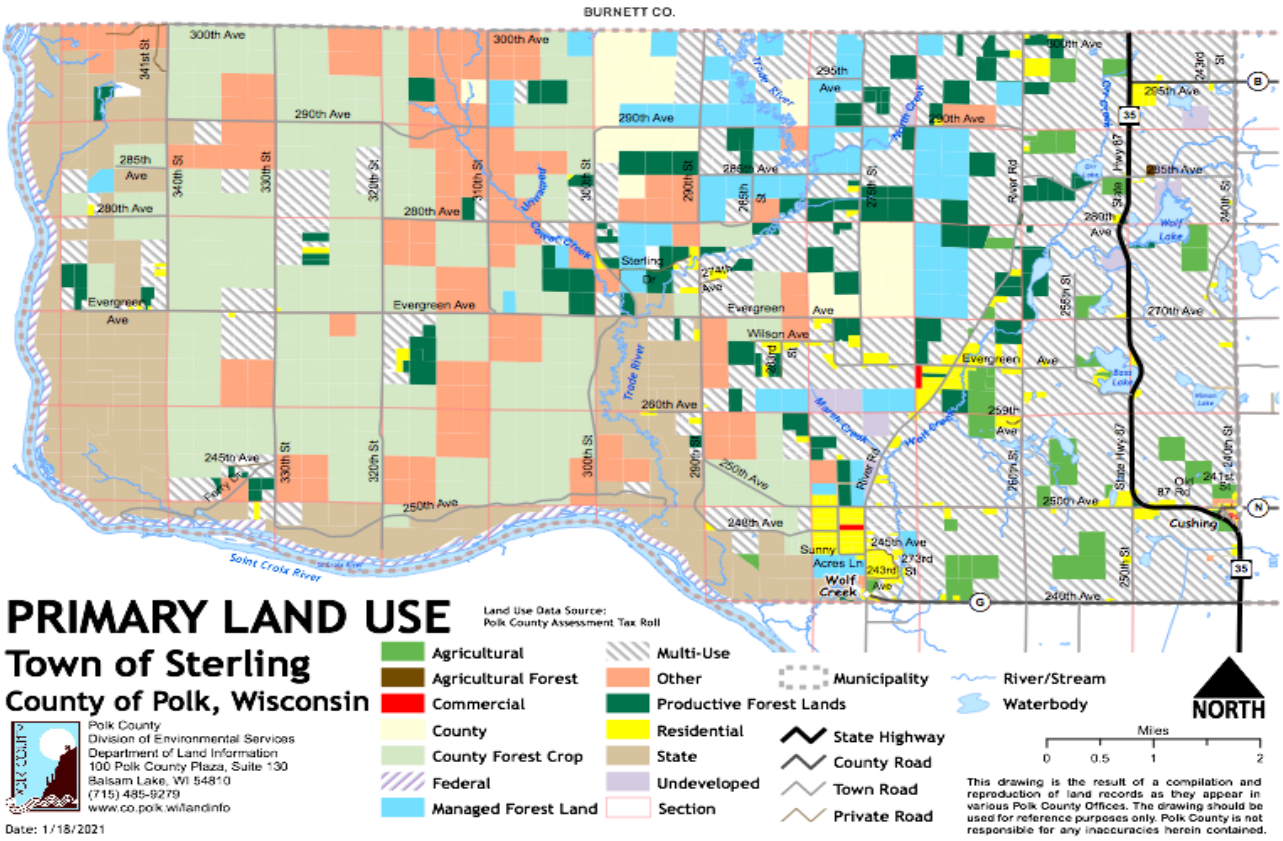
A. Land Use

Sterling Township is situated in the NW corner of Polk County and is predominately rural in character. The combined land and surface water area is 64.4 square miles. The town is rectangular shape and approximately 11 x 6 miles ~ divided into West Sterling T.36N.- R.20.W. and East Sterling T.36N.- R.19.W. Sterling is bordered by the towns of Laketown, Eureka and Anderson and the St. Croix River. The following maps provide a visual of land uses within the Town of Sterling.

The topography of Sterling is variety of fields and grasslands, forests, shrub land, lakes, and streams. Soils are mostly sand and gravel deposits that have been shaped by glaciation, wind, and erosion to a nearly flat plain. Elevation ranges from 823 ft above sea level (NW corner) to 1,300 ft. (East/Central) with a slope of 6-20%



The Wisconsin Land Legacy Report, indicates that the town of Sterling has the largest total acreage of public and natural resource land in Polk County - over 19,000 acres covering almost ¾ of the township. These areas are owned and managed by: Town of Sterling -10,186.5 acres, Polk County - 8,674 acres and State of Wisconsin (DNR) and U.S. Federal - 5,311 acres.



About 18 % of Sterling's 40,625 acres are used for agriculture, while over 70% is (designated) forest land. The remaining acreage is a combination of urban/rural residential, recreation and undeveloped.

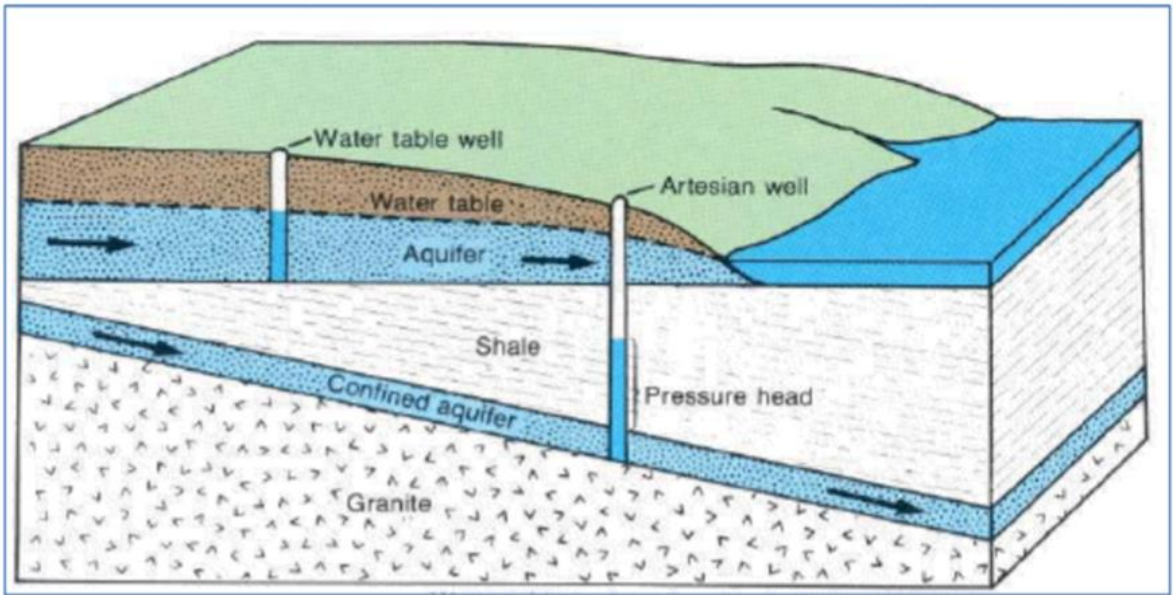
B. Water Resources – Nitrates – Phosphorus - Pathogens

1. **Groundwater**

Sterling residents rely solely on groundwater for drinking water and agricultural use. Well water is drawn from various depths depending on topography and the character of the underlying aquifer.

Polk County Comprehensive Plan 2009 – identified groundwater as the most important natural resource in the county. Understanding how groundwater is used in the county / and how it can become contaminated is important to understanding the relationship between land use and groundwater quality.

Groundwater exists in saturated zones beneath the land surface. The upper surface of the saturated zone is the water table. Groundwater does not form underground rivers. Water in the saturated zone fills the pores and fractures in the underground layers of sand gravel, other rock, similar to how water fills a sponge. If groundwater can be removed from these layers by pumping, or flows out naturally, these layers of rock or soil are called aquifers. Where glacial drift is shallow – potential for a good well could be poor.



Source: USGS Ground Water and the Rural Homeowner page 11

Groundwater moves slowly, typically at rates of 3 to 25 inches per day. As a result, water can remain in an aquifer for hundreds or thousands of years.

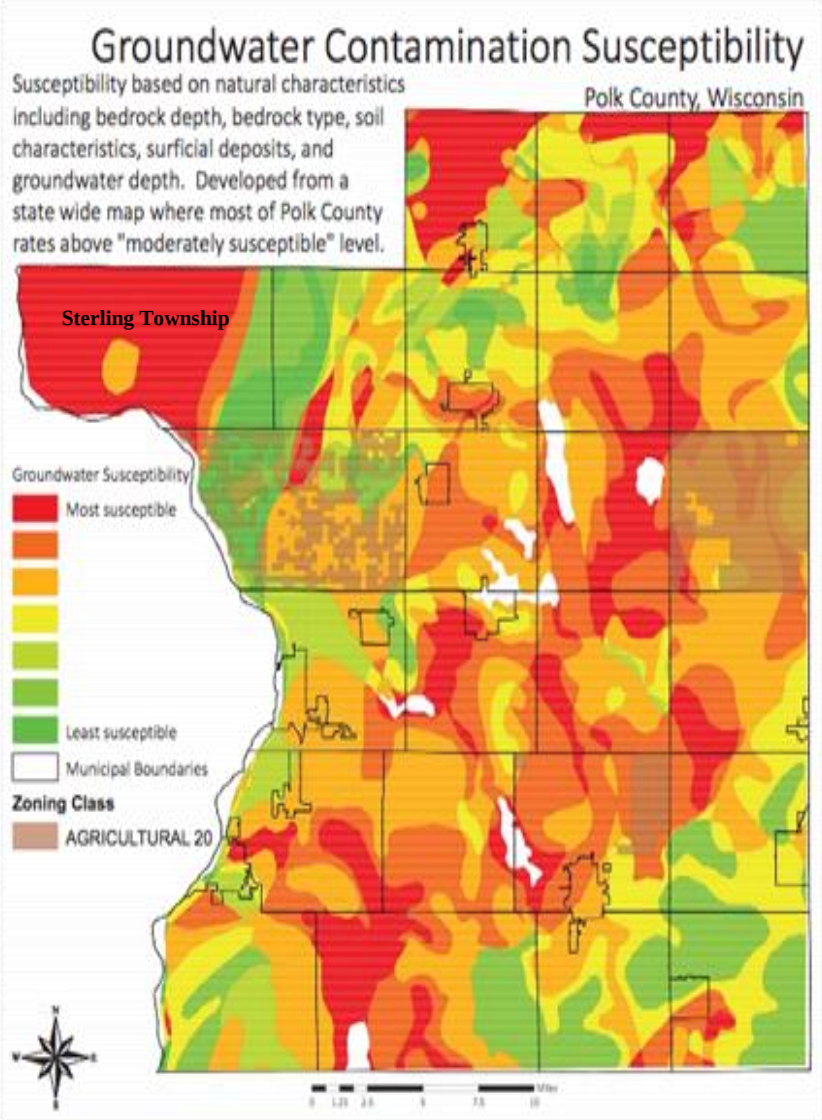
The water table and artesian wells tap into confined aquifers that are under pressure and flow naturally.

How susceptible an aquifer is to contamination is determined by how easily water can enter and move through. In effort to identify susceptibility, five factors are used to estimate how easily a contaminate (any substance) can transfer through the land surface to groundwater.

These 5 factors are:

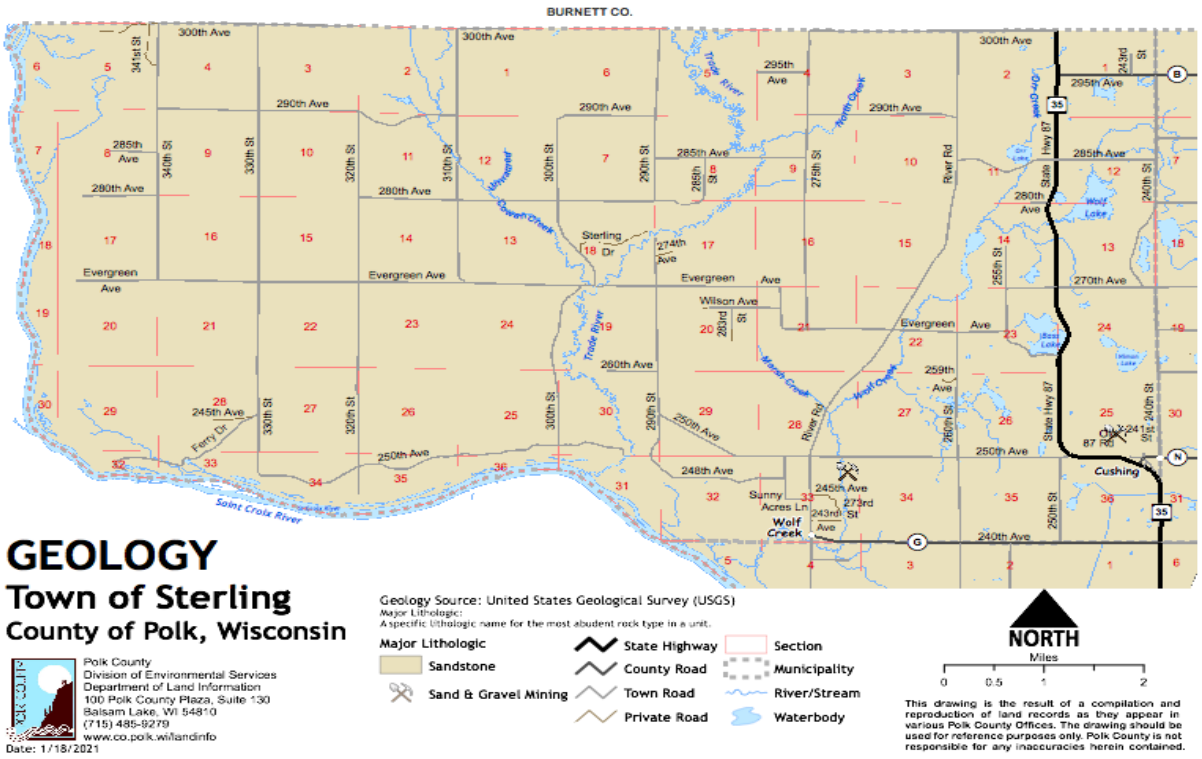
- Soil type
- Bedrock
- Materials between soil and bedrock
- Depth to bedrock
- Depth to groundwater table

Developed from a statewide map where most of Polk County rates above "moderately susceptible" for groundwater contamination ~ based on the five factors that determine susceptibility ~
about 90% of Sterling has elevated levels of groundwater susceptibility. Much of the western area of the town - shown in red shading and is most susceptible.
The east side of Sterling, shaded in green is less susceptible.



The Geology of Sterling Map (below) and the General Soil Associations Map of Polk County, (next page) indicate the most abundant rock and soil type in Sterling is sandstone.
Areas with sand and gravel are very sensitive to groundwater contamination.

The Town is part of the Northwest Sands – Ecological Landscape. This unique landscape stretches from just south of Lake Superior in Bayfield County to Sterling. The sandy soils that define the region, along with lakes and rivers are remnants of past glaciers. This area is often referred to as the "Barrens". The brushy landscape contains a rich diversity of plants and animals. Barrens have declined in the world and have been listed as globally rare.

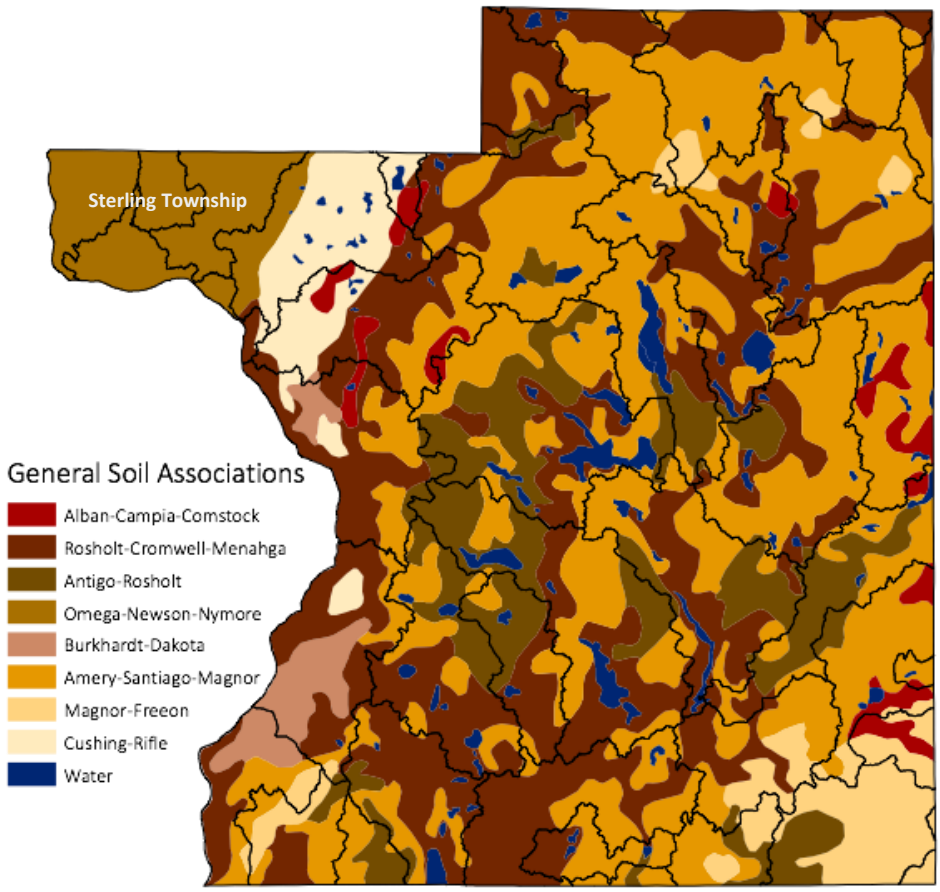


Sterling is within the St. Croix River Basin – which includes 9 counties and 255 miles of the St. Croix River and its tributaries flow through some of the most scenic and least developed country in the upper Midwest. Two watersheds in Sterling, Trade River and Wolf Creek watersheds have streams/creeks that flow into and out of lakes and wetlands.

This water eventually flows into the St. Croix River, and down to the Gulf of Mexico.

Sedimentation and phosphorous loading, plus bank erosion, increased water temperature, and loss of natural habitat are concerns of our lakes and flowages. The Trade River and Wolf Creek Watersheds lack substantial drainage patterns, due to glacial outwash and have high permeability.
The state of Wisconsin has ranked these areas high to susceptibility to ground water contamination from surface sources.

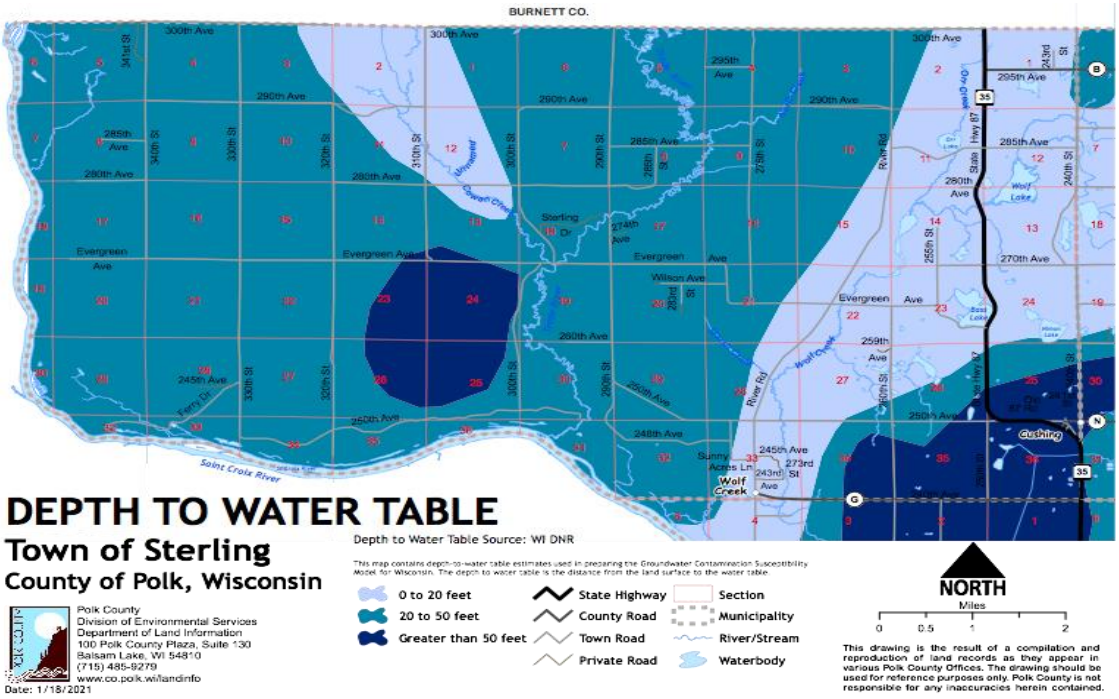
General Soils Association Map – Polk County



The majority soil type of soil type found in Sterling is Antigo Rosholt

Depth to Water Table

The distance from the land surface to groundwater below shows that the water tables in the Town of Sterling fall into three depth estimates. 0-20 feet, and depths greater than 50 feet.



Nitrate Pollution of Ground water

Nitrate pollution from CAFOs is an especially big concern based on research completed by universities and government agencies. However, some advocacy groups for CAFOs do not support this concern and believe that other sources, not CAFOs, are responsible for high levels of nitrates in drinking water. For example, private septic systems (not designed to treat for nitrogen) and people who use nitrogen in their yards.

The safe limit for nitrate in water as defined in the federal Safe Drinking Water Act is 10 milligrams per liter (mg/l.) The 10mg /l limit was set in 1962 and is based on studies from the 1940s. Some question whether limits set 59 years ago, can still be scientifically justified, and new evidence could show that the limit should be higher – others think it should be lower.
The 2020 Wisconsin Groundwater Coordinating Council Report stated that nitrates, bacteria, and farm chemicals are several contamination concerns for private wells. Statewide 9% of wells tested exceeded the 10 ppm Nitrate-N safe drinking water standard. While some residents test their water, there is no systematic, long-term effort by Polk County or State of Wisconsin to collect, test and analyze results. Private well testing is done by a very low percentage of well owners in any given year. Those who do test, are interested in current condition of their water, not determining long-tern changes. Systemic, repeated tests on the same set of wells over time is needed.

The University of Wisconsin-Stevens Point collects private well data that is voluntarily submitted and publishes it on their Well Water Quality Viewer. Samples are listed by town and section with no exact addresses given. However, it is not considered a scientific study and does not represent well water quality information for all known private wells. In another on-going study, the State of Wisconsin Department of Health has test results from 55,000 well tests throughout the state. The percentage of wells exceeding nitrate limit varies widely from zero in the north to 20-39 % in south-central counties. Five to ten percent of Polk County wells exceeded current standards.

The following water tests were collected from wells in the Town of Sterling.

This data was retrieved in April 2021. Source : University of Wisconsin – Stevens Point

NITRATE (mg/l as N) for Township 36N R19W

Range	Number	Percent	Summary
None Detected	15	26%	Minimum: No Detect
... 2.0	29	51%	
2.1 - 5.0	7	12%	Median: 0.3
5.1 - 10.0	4	7%	Average: 1.6
10.1 - 20.0	2	4%	
20.1 ...	0	0%	Maximum: 14.2
Total Samples:	57		
> 10mg/l N	2	4%	Exceeds Health Standard

East Sterling - 57 samples.
Two (2) exceeded the maximum health standard of 10mg/l.
The average is 1.6mg/l with a median of 0.3mg/l.
Fifteen (15) samples showed no nitrates.

NITRATE (mg/l as N) for Township 36N R20W

Range	Number	Percent	Summary
None Detected	2	29%	Minimum: No Detect
... 2.0	4	57%	
2.1 - 5.0	1	14%	Median: 0.1
5.1 - 10.0	0	0%	Average: 0.7
10.1 - 20.0	0	0%	
20.1 ...	0	0%	Maximum: 2.9
Total Samples:	7		
> 10mg/l N	0	0%	Exceeds Health Standard

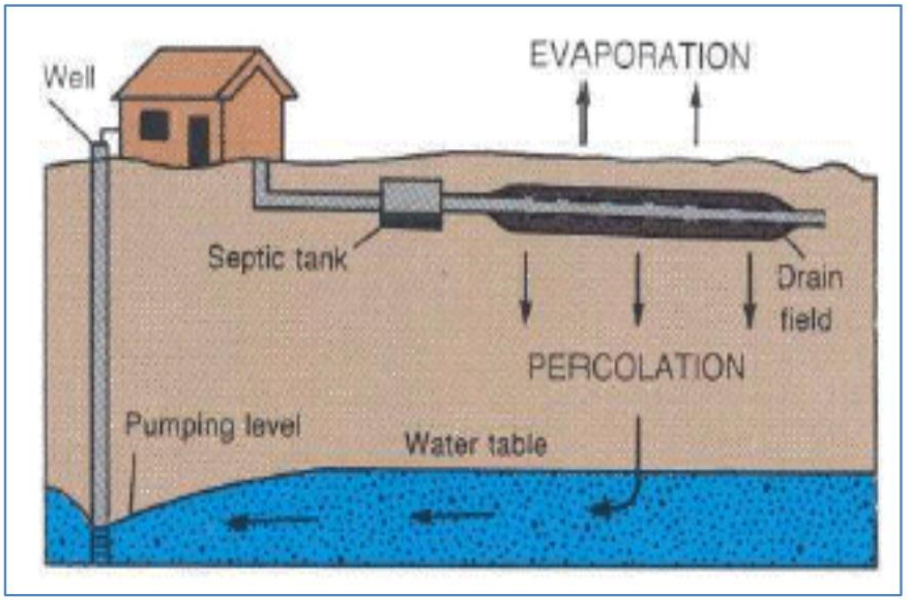
West Sterling - 7 samples
No samples exceeded the maximum health standard.

While there is very limited well data available for Sterling, a 2019 study done by Polk County (Land and Water Resource Department) in the Balsam Lake Watershed, found that 15 % of the wells tested exceeded the nitrate health standard. Considering these results, Polk County's Large-Scale Livestock Facility Study Group – April 2020 report recommended that: "The percentage of wells testing positive for nitrates indicates that the County's groundwater is susceptible to nitrates and other contaminants and should be monitored further."

Estimates predict that even under today's best Nutrient Management Plans, nearly 20 percent of nitrogen fertilizer is not used by crops. One DATCP study estimated that 200 million pounds of nitrogen were applied in excess of recommendations. CAFOs use very little pasture and a decreasing amount of alfalfa leaving many more acres in row crops with higher nitrogen releases. Past agricultural practices can continue to impact some geologic settings as nitrate works down into deep aquifers.

- The 2020 Wisconsin Groundwater Coordinating Council report included an in-depth section on nitrate pollution. The report finds that nutrient application from fertilizes and manure on agricultural fields accounts for 90 percent of nitrate in groundwater. However, NMP are not designed to assess potential nitrate pollution to groundwater. Numerous studies indicate that these plans do not always reduce nitrate levels to below the 10ppm standard. This 2020 report and many other studies summarize health risks from nitrate pollution, including:
    - Infants below the age of 6 months are especially at risk and could become seriously ill with a condition called methemoglobinemia or "blue-baby syndrome"
    - Growing evidence of a correlation between nitrate and diabetes in children
    - Birth defects have been linked to nitrate exposure
    - Thyroid disease
    - Increased risk of non-Hodgkin's lymphoma, gastric cancer, colon cancer, bladder, and ovarian cancer.

Other Types of Groundwater Pollution



Residential septic systems, municipal water systems and waste treatment plants, such as Cushing Sanitary District, can also be sources of nitrate pollution.

A 2012 survey of municipal water systems, cited in the 2018 Wisconsin Groundwater Coordinating Council Report, found 47 exceeded nitrate limits, up from only 14 in 1999

2. SURFACE WATER

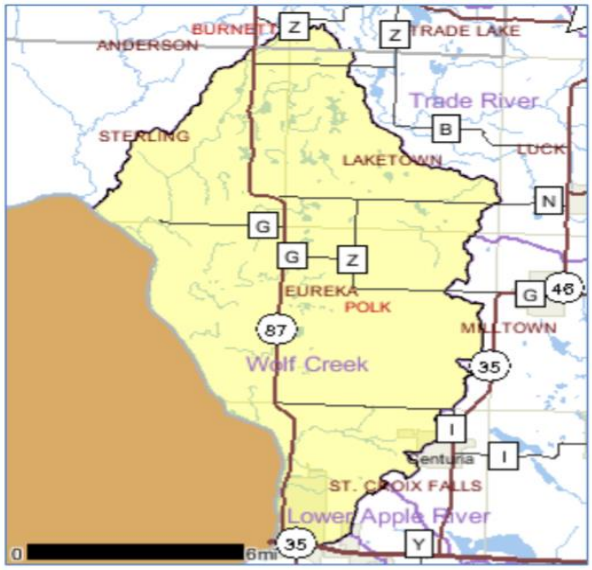
Surface water is water that is above ground, including lakes, ponds, rivers, creeks, streams and wetlands. Surface water is valued for recreation, important for a healthy ecological system, and provides habitat for many animal and aquatic species.

As shown in this map, Wisconsin is divided into 24 drainage systems. Each drainage system is divided into smaller watersheds that include all the land drained by the smaller rivers and creeks.

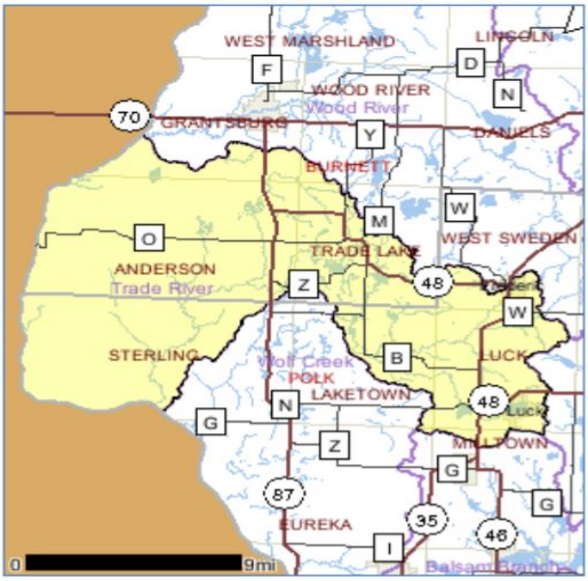
Sterling is part of the St. Croix River Watershed / Basin.

Watersheds are important because the stream flow and the water quality of a river are affected by things human-induced or not happening in the land area above the river-outflow point.

The two watersheds in Sterling – Trade River and Wolf Creek, drain to the St. Croix, then to the Mississippi and down to the Gulf of Mexico. Pollution is a big concern for cities and townships locate in these watershed areas – and down to the Gulf of Mexico's "dead zone".



Wolf Creek Watershed - WiDNR



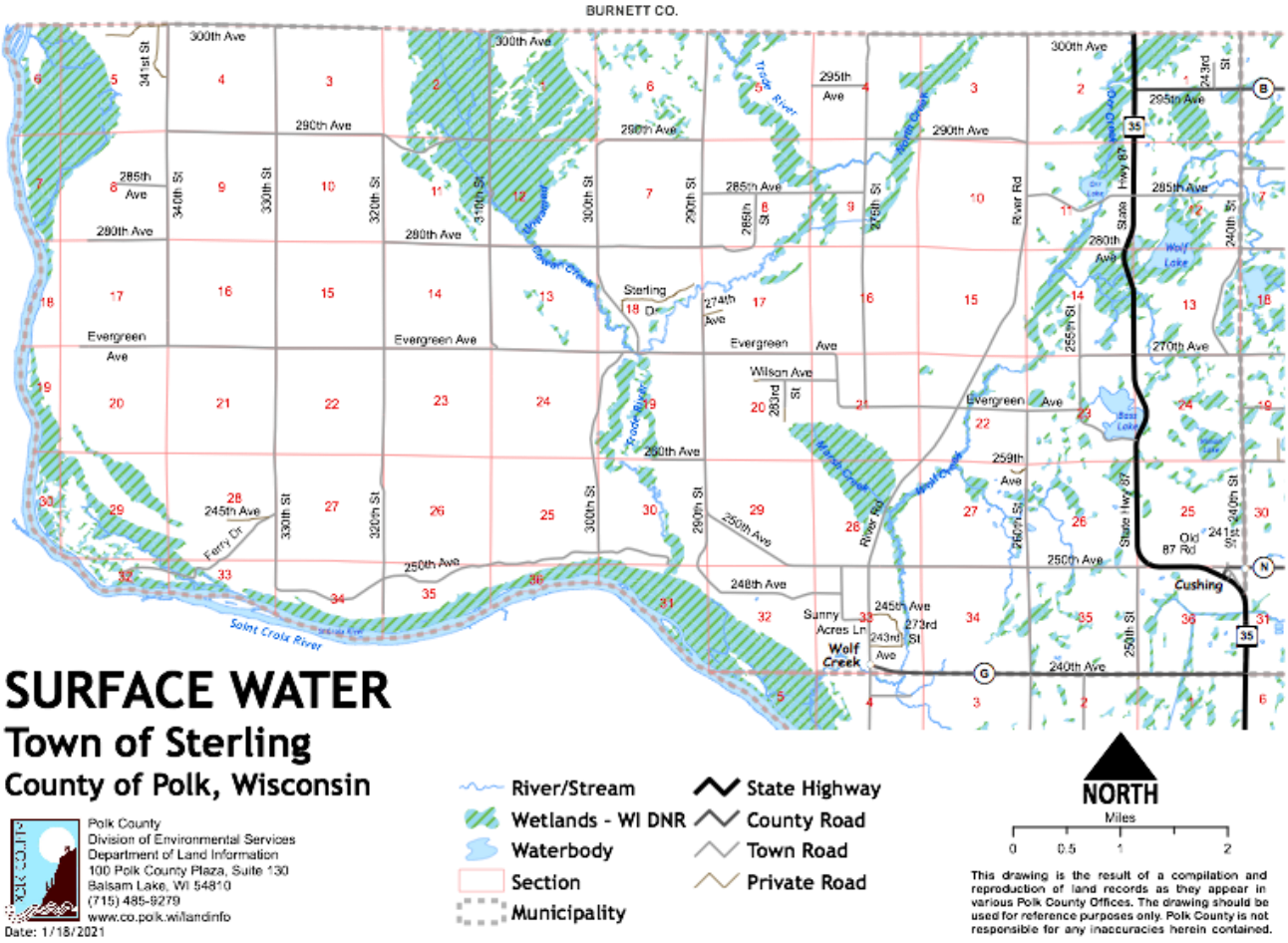
Trade Lake Watershed - Wi DNR

Source: St. Croix River Basin – Wisconsin DNR

Springs, rainfall, and any water that collects, is considered surface water and part of the St. Croix watershed / basin.

Even though there are more than 12 miles of the St. Croix National Scenic Riverway, forming the west and a portion of the south Township boundaries, it is not listed as part of surface water of Sterling.

Town of Sterling Surface Water Map



Surface Water in Sterling

- Trade River – meanders north / south
- Wolf Creek - ranked 1 and 2 trout stream
- Creeks - Orr, Cowen, Lagoo, Cold, North and Marsh creek, all flow into the Trade River or Wolf Creek
- 10 named lakes - Bass Lake is the largest at 75.5 acres, the smallest is Simson Lake at 5 acres and numerous (unnamed) small glacial lakes and ponds.

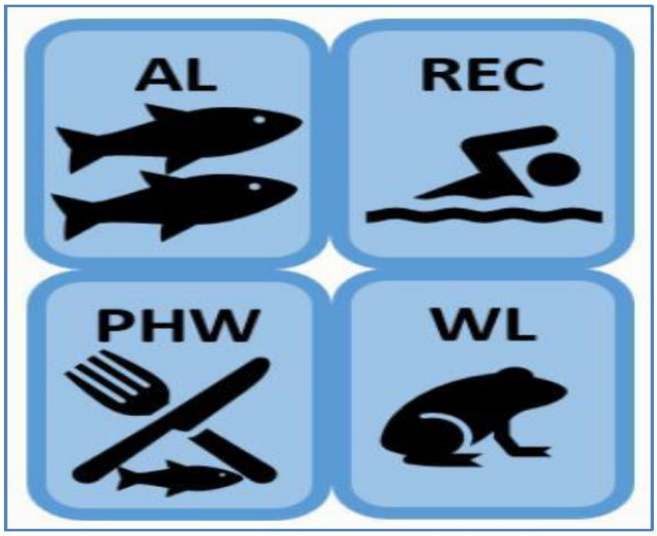
The State of Wisconsin manages a Surface Water Quality Assessment program under the Clean Water Act. Lakes and rivers are monitored and assessed, based on what specific use each is expected to support, including:

Aquatic Life (AL): Can aquatic organisms live and reproduce?

Recreation (REC): Can people safely recreate (boating, swimming, etc.?

Public Health & Welfare (PHW): Can people safely eat the fish from this water?

Wildlife (WL): Can wildlife safely use the waterbody for food or part of their life cycle.



Impaired Waters

Every two years, on even numbered years, the Wisconsin DNR reports on the health of surface water located in our state. Not all water bodies have been assessed. However, an important part of the report includes a list of lakes and rivers that do not meet water quality standards and do not have a plan to remedy water quality.

In the Sterling, portions of the Trade River are on the Wisconsin Impaired Waters list.

It is noteworthy, that in 2020, Bass Lake and Wolf Lake, were assessed “fair”,
and Orr Lake and Roger Lakes were rated “excellent”.

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Phosphorus and Nitrogen Pollution of Surface Water

Wisconsin sets regulation standards for the amount of phosphorus that can safely be in the water. Any impaired waterbodies are on the list because they exceed those standards.

Like nitrogen, phosphorus is an essential nutrient for plant growth. They are both major factors behind algae blooms. Even small increases in phosphorus fuel these blooms, which in turn reduces animal health, recreational use, public health, and property values. Phosphorus comes from point and non-point sources. An example of a point source is sewage treatment plant. Discharges are spread on the land instead of going into the water. Non-point sources include runoff from farm fields, feedlots, or urban areas that wash down fertilizer, manure, soil, and other phosphorus-containing contaminants.

In addition, there are natural sources of phosphorus such as soil erosion and build up in lake-bottom sediments. Blooms especially thrive in shallow, warm, nom-moving bodies of water. High phosphorus and nitrogen levels, warm water temperatures and high light levels stimulate the rapid growth of algae until it forms a bloom. These vary in appearance and can appear as foam, scum, or mats on the surface of the water. Blooms come in a variety of colors, including blue-green, bright green, brown or red.
If ingested, algae can cause flu-like symptoms in people and death in pets. Though not directly toxic to fish and other aquatic life, blooms are deadly because after the algae dies, bacteria breaks the algae down. During this process, oxygen levels drop in the water leaving "dead zones", where life cannot survive.

Algae blooms in the St. Croix River and area lakes were especially bad during the summer of 2012, when it was very hot and dry.
Monitoring blooms in Wisconsin's more than 15,000 lakes and 12,600 rivers is a challenge. The DNR is now working with NASA to track algae blooms with satellite imagery.

Pathogens

Although animal manure is a valuable fertilizer, waste quantities of the magnitude produced by CAFOs present a public health (and ecological) hazard through the degradation of surface and ground water resources. CAFO-generated liquid manure has constituents and byproducts of health concern. Bacteria, viruses, and parasites can cause disease or infection in animals or humans are known as pathogens. Human health can be affected by some 150 pathogens found in manure.
Types of pathogens and their concentrations in field runoff are highly variable. Runoff may contain pathogens many months after manure application. If the manure has high pathogen concentration to begin with, even with reduction, the concentration of runoff can remain above the does that can cause infections.

Pathogen-concentrated water can lead to widespread outbreaks of illness. There is also the possibility that disease-resistant bacteria can emerge in areas surrounding CAFOs. Bacteria that cannot be treated by antibiotics can have very serious effects on human health, potentially causing death.

Healthy people exposed to pathogens can have severe diarrhea but usually recover. However, those this weakened immune systems are at increased risk for severe illness or death. This group includes about 20% of the people including infants and young children, pregnant women, the elderly, and those who are immunosuppressed, HIV positive, or have had chemotherapy.

Pathogens found in animal manure include the following:

Pathogen	Disease	Symptoms
Bacillus anthracis	Anthrax	Skin sores, headache, fever, chills, nausea, vomiting
Escherichia coli	Colibacilosis, Coliform mastitis-metris	Diarrhea, abdominal gas
Leptospira pomona	Leptospirosis	Abdominal pain, muscle pain, vomiting, fever
Listeria monocytogenes	Listerosis	Fever, fatigue, nausea, vomiting, diarrhea
Salmonella species	Salmonellosis	Abdominal pain, diarrhea, nausea, chills, fever, headache
Clostirdum tetani	Tetanus	Violent muscle spasms, lockjaw, difficulty breathing
Histoplasma capsulatum	Histoplasmosis	Fever, chills, muscle ache, cough rash, joint pain and stiffness
Microsporum and *Trichophyton*	Ringworm	Itching, rash
Giardia lamblia	Giardiasis	Diarrhea, abdominal pain, abdominal gas, nausea, vomiting, fever
Cryptosporidium species	Cryptosporidosis	Diarrhea, dehydration, weakness, abdominal cramping

National Association of Local Boards of Health: Understanding CAFOs page 16

There is also the possibility of novel viruses developing. Through mutation, these viruses can become capable of efficient human-to-human transmission. CAFOs are not required to test for these novel viruses. In general, manure is not routinely tested for pathogens.

C. Air Quality and Odor

While regulations for manure spreading are designed to protect water, there is no regulation of air pollution. Under Wisconsin Rules, air pollution is called odor and regulated by setbacks. Concentrated livestock operations can emit hazardous chemicals including ammonia, hydrogen sulfide, methane, and particulate matter. This is a major health concern for community members living near CAFO operations.

Pollutants commonly found in air surrounding CAFOs include the following:

CAFO Emissions	Source	Traits	Health Risks
Ammonia	Formed when microbes decompose undigested organic nitrogen compounds in manure	Colorless, sharp pungent odor	Respiratory irritant, chemical burns to the respiratory tract, skin, and eyes, severe cough, chronic lung disease
Hydrogen Sulfide	Anaerobic bacterial decomposition of protein and other sulfur containing organic matter	Odor of rotten eggs	Inflammation of the moist membranes of eye and respiratory tract, olfactory neuron loss, death
Methane	Microbial degradation of organic matter under anaerobic conditions	Colorless, odorless, highly flammable	No health risks. Is a greenhouse gas and contributes to climate change.
Particulate Matter	Feed, bedding materials, dry manure, unpaved soil surfaces, animal dander, poultry feathers	Comprised of fecal matter, feed materials, pollen, bacteria, fungi, skin cells, silicates	Chronic bronchitis, chronic respiratory symptoms, declines in lung function, organic dust toxic syndrome

Source: National Association of Local Boards of Health: Understanding CAFOs – page 13

This air pollution can cause or exacerbate respiratory conditions including asthma, eye irritation, difficulty breathing, wheezing, sore throat, chest tightness, nausea, bronchitis, and allergic reactions. One Pennsylvania study showed that living near poultry operations may increase the risk of community-acquired pneumonia.

Another study in that state linked industrial animal agriculture operations and asthma. Recent studies from North Carolina show high rates of infant mortality, low birth weights, kidney disease and tuberculosis in communities near hog factories.
(Additional studies on air pollution, are listed in Citations)

Daily activities, social gatherings and general quality of life are impaired by the odors associated with hydrogen sulfide and ammonia emissions. This has been shown to contribute to stress and increased blood pressure.

Wisconsin's 2019 Livestock Facilities Siting Technical Expert Committee raised concerns about existing setbacks as its top priority. In response DATCP attempted to address air pollution issues by developing setbacks based on science in the 2019 Final Draft ACTP 51 Rule *(pages 12-14).* These setbacks were based on the OFFSET modeling tool. While the OFFSET model is designed to mitigate the impact of odors from hydrogen sulfide and ammonia air pollution, there are other issues addressed by setbacks, including, but not limited to: particulate, light and noise pollution, and fly infestations.

Under the science-based model, new facilities would have to be set back from neighbors by 1,050 to 1,450 feet. Citizens across Wisconsin attended hearings on the rule raising concerns about air pollution and supporting the proposed setbacks. Large livestock producers protested that the rule was too costly and it was dropped by Governor Evers in November 2019.
Burnett County (page 23) also recommends more stringent setbacks.

D. In November 2019, the American Public Health Association called for:

Nationwide ~ Precautionary Moratorium on New and Expanding CAFOs

AMERICAN PUBLIC HEALTH ASSOCIATION
For science. For action. For health.

Abstract – The current industrial system of food animal production has externalized the costs of environmental degradation and adverse health impacts, keeping retail meat prices artificially low while shifting health and environmental costs onto communities and individual Americans. Moreover, these negative, externalized costs are likely to mount in coming years. Despite the growing evidence that CAFOs pose health and environmental risks and negatively impact workers and communities, CAFO regulations and their enforcement have failed to adequately protect human health and the environment.
This policy statement calls for a moratorium on the establishment of new CAFOs and expansion of existing CAFOs until regulation and enforcement conditions are in place to adequately protect the public's health.

6. Safety Impacts

Concerns -

- Increased heavy truck traffic – potential damage to local roads.
- High numbers of semis hauling livestock increases the danger of (serious) crashes.
- Large buildings filled with thousands of animals complicates fire / rescue response.
- Infectious human and animal disease makes the large livestock system especially vulnerable.

Heavy trucks associated with livestock operations for movement of facility products, manure, crops, livestock, and other goods / services can damage roadway, shoulders and increase traffic safety risks.

A. Roads

Two major issues arise regarding local roads and large livestock facilities – damage and crashes.
The Wisconsin Towns Association (WTA) made the following recommendations to DATCP as part of their comments on new livestock siting rules:

> *"The WTA feels strongly that a sixth work sheet must be added that at least considers the transportation infrastructure needs associated with a new or expanding facility; the current state of the transportation infrastructure proposed to be used; the gap between needs and current status; a process for identifying both short and long term damage and long term physical degradation of infrastructure resulting from the operation; and a method for the operation to fund road damage and life cycle costs accruing to the operation at the owner's expense."*

In late 2020, Wisconsin received a D+ rating for roads from the American Society of Civil Engineers. This rating was given because the of "the state's 115,000 miles of drivable roadways, more than one-third are in fair or poor condition." The Wisconsin Department of Transportation reports that an additional $180 million will be needed per year, for the next 10 years just to maintain current pavement conditions"

The Town of Sterling has one State Highway (87) and two County Roads. County G, boundary between Sterling and Eureka township, and County Road N in Cushing. There are approximately 48 miles of paved roads, 44 miles of gravel roads, and several private roads. County and town roads have different construction standards and maintenance characteristics.
There are multiple rivers and creeks running the entire span north to south of the township that require (4) bridges. Bridges require routine maintenance and inspections, and future bridges may need increased tonnage necessary for truck hauling. Heavy vehicles used by large-scale livestock facilities, conducting frequent transport, routinely place greater demands on local roads and bridges. Maintenance and replacement costs are often more than taxes paid by facilities or funds budgeted buy townships / communities.

The Town of Sterling and Polk County often enforce seasonal weight limits on certain roads and cites that it is critical to have temporary load limits. This could be a barrier to a large-scale animal operation that requires access to roads with no weight restrictions year-round.

Polk County acknowledged the growing need to limit heavier agricultural equipment on roads and wrote, "Effective January 1, 2015, in Polk County, all Implements of Husbandry (IoH) defined in Wis. Stat.3401(24)(a) 1.b may not exceed the weight limits imposed by Wis. Stat. 348.15(3)(g)."

The Wisconsin Towns Association also comments on what the estimates are is a CAFO that spreads.

> *"7 million gallons of manure annually will prematurely decrease the life of a road that witnesses every trip by 30 years of the original 50-year life, if the road was built with 3 inches of asphalt over 5 inches of gravel on fair base soils. Similarly, if the road is built with 5.5 inches of asphalt over 9 inches of gravel, this same combination would result in no premature aging of the road."*

Research indicates that heavy truck use can decrease road longevity by more than 50%. Traffic Impact Analysis studies (TIA) for CAFO operations are not required but could be conducted at local levels.

Burnett County's December 2020 Large Scale Livestock Study Recommendations, include asking the County Board to seek state taxpayer dollars to mitigate expected impacts on local road infrastructure.

In addition to damaging roads, high numbers of livestock and support vehicles can lead to an increase in the number of tragic crashes. These incidents often require special resources and preparedness. Stabilizing vehicles, traffic control, rescue and care of occupants and capturing loose (injured) animals.

B. Fire

Every community dreads the tragedy of a catastrophic barn fire. The huge numbers of (confined) animals involved make large livestock facility fires even more troublesome. A March 2019 fire in Mondovi, WI killed an estimated 4,000 hogs. Hazardous winter weather condition made the scene very dangerous, sending one fire department apparatus into the ditch.
The potential severity of agriculture facility fires, generally require specialized equipment, training and mutual assistance from surrounding communities.

Authorities put the cost of the fire at $10 million. Animals killed in the blaze had to be trucked to a sanitary landfill as part of the cleanup.

C. Infectious Disease

We would be remiss not to include the dangers of infectious disease outbreaks in this report. Two major disease outbreaks – Covid-19 in humans and African Swine Fever Virus in hogs – illustrate how vulnerable towns like Sterling could be to large livestock facilities.

COVID -19

Corporate-owned processing plants across the nation and Wisconsin, experienced COVID-19 infection rates among workers as high as 25% early in the 2020 pandemic. According to a May 8, 2020 Centers for Disease Control (CDC) Report, these high rates of infection forced more than 100 plants to close. This especially caused problems for swine CAFOs which cannot ship animals over 280 pounds to slaughter. The closure of so many processing plants, meant that these large facilities had nowhere to ship their animals. The Chinese-owned Smithfield hog processing plant in Sioux Falls, SD, was one of the first to close. The president of the National Pork Producers Council, said on April 29, 2020 that "millions of pigs can't enter the food chain" and will have to be killed or disposed of.

The Brazilian-owned JBS plant in Worthington MN reopened to euthanize, not process, up to 13,000 hogs a day. Indicating that the "carcasses will be rendered, sent to landfills, composted or buried".

A serious disease outbreak in our area, or global pandemic could leave Sterling in a perilous position if a highly concentrated production facilities had to dispose of thousands of animals. While the U.S. Department of Agriculture has recommended procedures for mass depopulation, it is very challenging and presents many disposal issues.

African Swine Fever Virus

Millions of hogs have died or have been killed, globally because of African Swine Fever (ASF), commonly known called, Hog Ebola. Experts predict 25 percent of the global herd will perish. The disease is 100% fatal and the pathogen is especially hardy. Asian countries, such as China, Vietnam and Korea have been hit hard, and some countries are taking necessary action to stop the spread.

In response, the USDA held simulated exercises with 14 states in September 2019 to test our nation's ability to control an outbreak. The exercises were covered by industry press, but there has not been much coverage of the potential problems identified. Most of the focus is on how much taxpayers will have to reimburse corporate agriculture companies for deceased animals. Wisconsin was not one of the 14 states participating in the simulations. DATCP staff observed the Minnesota exercise and have published a 4-page African Fever Factsheet.

Interesting information from interviews held in October 2019 after the simulated exercises, with the Wisconsin DATCP Rebecca Slater, Emergency Response Coordinator, and Dr. Julie McGwin, Veterinarian Specialist identified multiple issues, including:

- In the event of an outbreak, thousands of trucks hauling an estimated million hogs would be required to comply with a 'stop movement order' for up to 72 hours. Standstills such as this are hard to enforce, and after 3 days the animals – many of them weanlings – start to die.
- 10 km quarantine ring would be put around any infected factory, heavily impacting locals.
- Procedures for handling effluent from the washing of infected trucks & factories are not clear.
- Procedures for killing tens of thousands of hogs in a factory are not clear.
- Composting and incineration are the recommended disposal techniques for carcasses once the herds are killed. Wisconsin lacks sufficient capacity for either method. In addition, the robust pathogen, types of infected material (metal cages, feed, etc.) and Polk County's high- water table make efficacy of composting questionable. Impact of compost leachate on ground water is unclear. Landfills did not want avian flu carcasses and concerns about taking so many dead hogs are expected to be even higher.
- USDA's Disease Response Strategy – African Swine Fever raises many issues about disposal, including the quote from page 15:

  > "Due to the persistent nature of ASFV (African Swine Fever Virus), options for disposal are limited. For example, composting may not be feasible when there are large amounts of biomass; resources for rendering are currently limited. Burial poses significant challenges with environmental contamination and the ability of the ASFV to persist in the environment. Each option has its own environmental, logistical and managerial challenges. APHIS (Animal and Plant Health Inspection Service) and State officials and subject matter experts will collaborate to determine best approaches."

7. Economic Impacts

It is difficult to precisely predict the economic impact that CAFOs will have on a specific location. There are many variables at work and each community has a unique set of economic factors. Making any predictions is also difficult because of the complex global trade and immigration policies large-livestock facilities rely on for success. While large producers and processors look for economics of scale, their facilities may restrict other types of economic growth and lower property values.

Concerns

- A large portion of Sterling's tax base is paid by forest / recreational land and rural residential.
- Large livestock facilities often lower property values and could impact Sterling's tax base.
- Large livestock facilities can depress economic activity in surrounding communities.
- Existing farmers may need better economics of scale and do not want their growth to be restricted.
- Agriculture and trade policies benefit highly capitalized operators instead of smaller operations.
- Local taxpayers bear CAFO costs such as permitting, road maintenance and pollution cleanup.
- Land identified as agricultural or recreational near water is sold for residential development.

Agriculture has been a vital part of the framework and character of Sterling since early settlers' when farmers and traders made their living from natural resources of the land. Even though current land use for agriculture (less than 7,000 acres) in Sterling is not the dominate percentage, agriculture is an important element of Sterling's social and economic character.

With the proposed swine CAFO choosing to locate in the town of Trade Lake, and the overall increase of large-scale livestock facilities being constructed throughout our state and across the nation, there are concerns regarding their impact on local economy.

At several area town board meetings in spring of 2019, there was citizen support for and concerns about the proposed Trade Lake CAFO. In June 2019, more than 200 people attended the Laketown board meeting. Dozens expressed their concerns (during public comment) about the impact of factory farming (CAFOs) could have on property values, and other economic issues. Some spoke of the need to let investors freely decide how to participate in the global economy. There are many economic issues, concerns about property values and farmers' ability to globally compete top the list.

Property Values and Local Economy

Over the past 35 years, there have been changes in agricultural landscape and practices. Consistent with other areas of the county and State of Wisconsin the number of farms in Sterling has declined. The US Department of Agriculture reported that between 1980 and 2008, the decline of farms across the United States was significant. Industrial livestock operations, in many areas are displacing independent farmers. CAFO operations tend to remove a high percentage of money from rural communities, more than smaller diversified, independently operated family farms – which tend to circulate money within the community.
With fewer farms in rural communities, tax receipts and declining local purchases decreased in Wisconsin, Iowa, Illinois, and Michigan.

Agricultural land and farms, rural residential, commercial property, and homes in the unincorporated community of Cushing, seasonal recreation property and cabins, provide Sterling's tax base.

The financial health of Sterling's government and citizens is based largely on property values. Large livestock facilities could bring new investment, and generate profits for a few local investors, while also negatively impacting property values. Virtually every study done on the subject in the past 20 years has confirmed the inevitable negative community impacts of CAFOs. For example, even a 5 percent drop in property value, could cost the town thousands of dollars or more annual tax revenues.

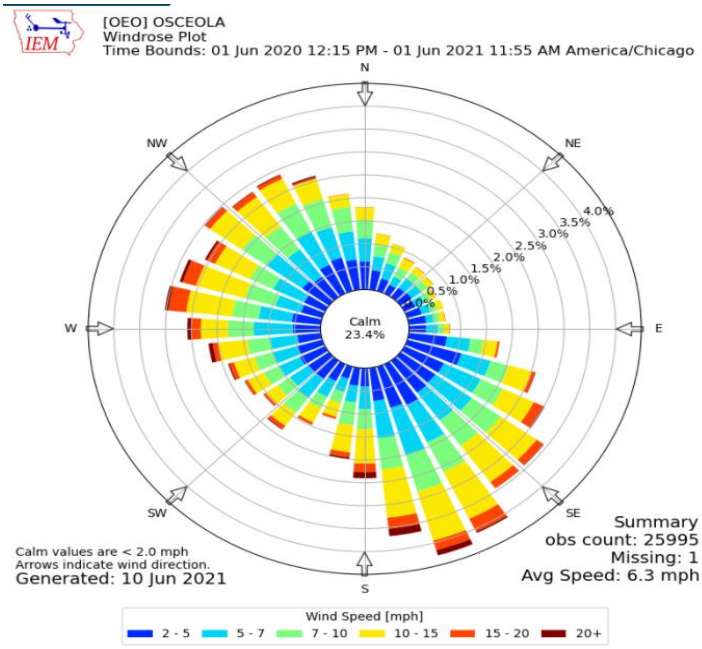
The following table summarizes information from a variety of sources analyzing the impact of CAFOs on property values. This includes cases where Wisconsin property owners appealed their tax assessments because of nearby livestock facilities, as well as university studies and articles from professional journals for appraisers. Most find a negative impact, while one Minnesota study from 1996 shows a positive impact.

Impact of CAFOs on Property Values	Research Article / Tax Record Citation
• Value of property located more than one mile away from a CAFO not impacted • Property located within any distance from a CAFO smaller than 4,000 AU not impacted • Value of property located within ¼ mile of a large CAFO is reduced by 13% • Value of property between ¼ mile and one mile is a large CAFO reduced by 8%	2017 Appeal #2017-81-01, Findings of Fact section D-6 Kewaunee County
Property taxes were lowered by 27% ($60,000) for a Green County, Wisconsin neighbor to a 2,400-head hog finisher (just under 1000 animal units). This is shown in the Findings of Fact and Order from Todd Knutson's property tax appeal in Green County, WI October 2016.	Case Number: 2016-76-01. Todd Knutson's property tax appeal Green County, WI October 2016
"Overall, the empirical evidence indicates that residences near Animal Operations are significantly affected, and data seems to suggest a valuation impact of up to 26% for nearby properties, depending on distance, wind direction, and other factors. Further, there has been some suggestion that properties immediately abutting an AO can be diminished as much as 88% … Not only are residents affected, but nearby small farms can be impacted by such factors as water degradation and insects."	Animal Operations and Residential Property Values (The Appraisal Journal, April 15, 2015)
"Results show price reductions of 23% - 32% for residential properties sold within 1.25 miles of the facility, and much larger losses northeast (downwind) of the facility."	The Effect of a Large Hog Barn Operation on Residential Sales Prices in Marshall County, KY (Josre, Dec. 14, 2014)
• Livestock operations in general "have a significant effect on rural residential property values." Most notable negative effects on property downwind and close. • Individuals downwind within ¼ mile would experience 11 to 26% reduction • Properties downwind and approximately ½ mile experienced or would experience an 8% to 18% reduction. • Properties 1.5 miles from the property have 0% to 6% reductions.	Living with Hogs in Iowa: The Impacts of Livestock Facilities on Rural Residential Property Values. (Iowa State University, August 2003)
This study finds a negative and significant impact on property value from hog operations.	Evaluating the Effect of Proximity to Hog Farms on Residential Property Values: A GIS-Based Hedonic Price Model Approach (URISA Journal 2005)
Large adverse impacts suffered by houses that are within three miles and directly downwind from a CAFO are found. Beyond three miles, CAFOs have a generally decreasing adverse impact on house prices as distance to the CAFO increases.	Analysis of the Impact of Swine CAFOs on the Value of Nearby Houses (Agricultural Economics – Journal of IAAE)
This 24-year-old study documents a statistically significant positive relationship between feedlots and property values.	Measured Effects of Feedlots on Residential Property Values in Minnesota: A Report to the Legislature (University of Minnesota College of Agriculture, Food and Environmental Sciences, July 1996)

Noted in several of these studies, properties located downwind are most affected. Pathogen concentrations in the air from manure spreading and/or storage depend primarily on wind speed, initial pathogen concentration and distance.

Microbial concentrations decline with distance, however, still detectible at 700 feet downwind depending on wind velocity, microbe concentration in the manure.

The following two figures are **wind roses** based on data taken at the Osceola airport in Polk County and Siren airport in Burnett County. These locations are the closest data collections sites for the US Automated Surface Observation Stations.

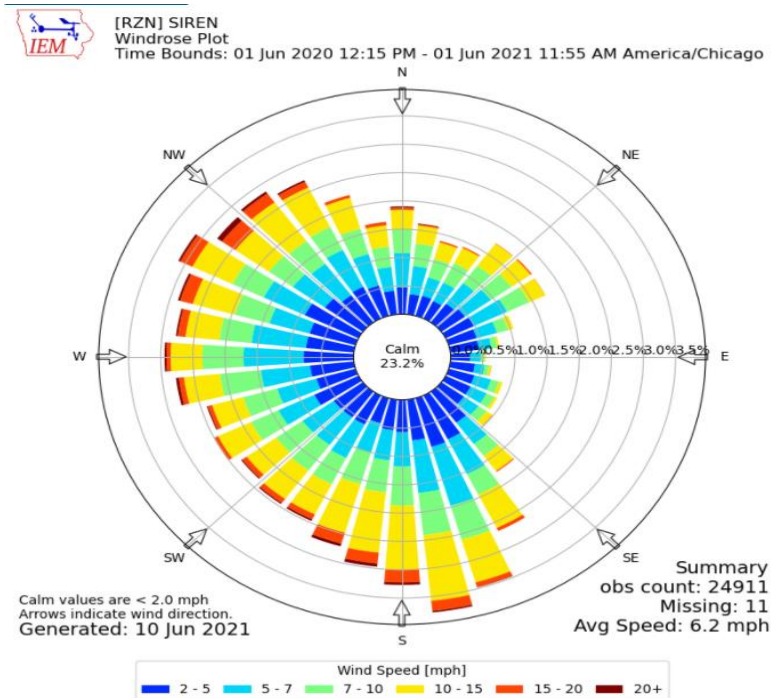


Wind roses are an informational-packed plot providing frequencies of wind direction and speed. They can quickly indicate the dominant wind directions and the directions of the strongest wind speeds. The length of tach "spoke" tells the frequency of wind coming from a particular direction….at a given location for a certain time. These roses are based on archived data.

The **Osceola airport** has over 25 years of data while Siren's has nearly 18 years. While the archive does contain errors, data from airports is good quality and representative of the local surrounding areas.

Source: Iowa State University – Environmental Mesonet

As both the wind roses show, the dominant winds in our area come from the south, southeast, and northwest. This means that properties northwest and southeast of a large livestock facility would be most affected.



The **Siren airport** also shows significant winds from the south and more from the northeast than Osceola

In addition to reducing current property values, the lack of regulations for livestock operations with less than 1,000 animal units (700 dairy cows, 2,500 pigs, 55,000 turkeys or 125,000 chickens) is impacting the ability of rural communities to attract new residents and grow new businesses.

For example, Iowa is seeing large growth in new hog CAFOs proposed as "999ers". These are usually finishing facilities with 2,499 hogs. By staying under 2,500 they are not regulated as CAFOs under the Clean Water Act. Towns that have zoned areas for housing to attract new home residents, are unable to stop CAFOs from moving in instead.

CAFOs can also impact property values indirectly by depressing economic activity in surrounding communities. This impact was summarized for real estate appraisers in a 2015 report from the Appraisal Institute.

One of the biggest impacts comes in the shift of purchases. Smaller farms make nearly 95 percent of their expenditures locally, while larger operations spend less than 20 percent locally. A study of 1,106 rural communities found that economic growth rates in communities with conventional farming were 55 percent higher than those with CAFOs. This negative impact was documented by reviewing sales tax receipts. Many CAFO operators contract with huge corporations that supply nearly all the inputs. CAFOs crowd out conventional farmers who purchase most or all their supplies locally, thus stimulating the local economy and real estate market.

Many of the swine CAFOs are on contract with corporations like Smithfield or Cargill. A 2012 University of Missouri analysis found that a 4,000 swine operation will generate and average of $164,000 from contract payments and $94,630 of fertilizer value in manure based on a two-year corn/soybean rotation. In addition, an estimated $242,000 in economic activity will be generated annually due to the multiplier effect of expenditures. Most of that economic activity will be generated in the surrounding rural area. There is a one-time economic benefit of $2,000,000 for the construction of the facility.

Cumberland LLC's representative, Jeff Sauer, said the facility he plans to build in Trade Lake would cost $20 million to construct, buy as many inputs as possible locally and employ 20 people. It is not known if Cumberland would use local construction crews. However, other large hog barns built in Wisconsin use construction companies that specialize in this type of construction.

The quest for economic efficiency has transformed American agriculture from a system of small / medium sized family farms, into a system of large-scale mechanized, corporately controlled agribusiness. For decades, national agriculture, trade and immigration policies have benefited large, highly capitalized operators.

In contrast to the industrial model, Sterling is one of many Polk County towns that have numerous independent producers of high-quality agricultural products. The cities of St. Croix Falls, Luck, Amery, Frederic, and Clear Lake, all have thriving, independent meat processors supplied by local agricultural producers. These local livestock producers and meat processors could lose out as corporate CAFOs take control of farmland and send all their animals to huge (non-community) processors.

8. Potential Options for Board Action

1. Develop a Comprehensive Management Plan for Town of Sterling
   An approved / adopted Township Comprehensive Plan serves as a local government guide for community physical, social, and economic government. It is not designed to serve as land use regulations in itself, instead the plan provides a rational basis for local land use decisions with a vision for future planning and community decisions.
   Generally, towns do a twenty-year plan (i.e., 2009-2029), reviewed after ten years. However, can be created at any time. Polk County Planner, and other State agencies and professionals can assist with this process.

2. Adopt Polk County Zoning
   County has authority to regulate land use through zoning. The Comprehensive Land Use Ordinance 37-20 adopted September 2020, currently allows CAFOs in A-2 zones.

3. Establish Township Zoning – or Regulatory Ordinances
   Locally established zoning districts specify what land uses are allowed. Township zoning ordinances could help regulate / site large livestock facilities. These Ordinances cannot be more restrictive than the State of Wisconsin Livestock Siting Licensing Ordinance, unless townships establish "reasonable and scientific findings of fact that more restrictive regulations are necessary to meet current water quality standards, or to protect identified sensitive areas.

4. Adopt CAFO Operations Ordinance similar to Town of Eureka and Town of Trade Lake.
   These ordinances regulate operation of the facility. Operations Ordinance requires applicant to have sufficient funds for pollution clean-up, nuisance abatement, and proper closure of the operation if it is abandoned or otherwise ceases to operate. Not based on siting / zoning, and Sterling could partner with neighboring towns located in same watershed district.

The following suggestions could be used during decision process:

- Develop option with input from and in consultation with farmers and community members.
- Protect farmers who are engaged in good practices to the extent required.
- Recognize there may be different standards depending on facility size, livestock type and operation.
- Focus on protecting water quality and quantity, public health and safety while preventing pollution, and nuisance concerns from neighbors.
- Consider geology, susceptibility for ground water and surface water contamination.
- Create conditions for safe / sustainable operations that are in the interest of all Sterling residents.
- Develop an evaluation plan for continued monitoring of the recommendations implemented, to evaluate overall effectiveness, along with any unintended consequences.

Agriculture is a significant aspect of the rural atmosphere and economy of Sterling, and the surrounding community. It is important to maintain a supportive and trustful climate for livestock operations to thrive and succeed. The Town of Sterling Large-Scale Livestock study committee members want any new regulations to value and support established agriculture.

9. Meetings / Presentations

June 17, 2019 Sterling Board meeting
Information / concerns regarding proposed (swine) CAFO ~ Town of Trade Lake, Burnett County Citizen Input - M. Marquardt

July 15, 2019 Sterling Board Meeting
Citizen Input – CAFOs in surrounding townships and importance of topic as relates to Town of Sterling

August 19, 2019 Town of Sterling Board Meeting
Citizen Input – Residents suggested Town Board establish moratorium on livestock facilities licensing – to research, draft language for (possible) ordinance / licensing

September 16, 2019 Town of Sterling establishes 12-month moratorium – to study impact of CAFOs special study committee to be established "Large-Scale Livestock Study Committee."

October 21, 2019 Sterling Board Meeting – Members of Large-Scale Livestock Study Committee appointed ~ Ben Lundgren, Marcia Marquardt, Allysse Sorenson, Keith Ward (Supervisor)

November 14, 2019 M. Marquardt (observation only) Town of Laketown Moratorium committee Meeting
Presentations by: Jason Kjeseth, Polk County Zoning and Tim Ritten, Polk Land & Water

November 20, 2019 **Town of Sterling Large-Scale Livestock Study Committee Meeting** – 1:00 pm – Cushing Community Center (CCC) – No observers Committee members (Marquardt, Lundgren)
Legal counsel Paul Mahler. Received current Federal and State laws / regulations pertaining to CAFOs.
Discussion regarding committee responsibilities / direction as outlined in moratorium.

January 29, 2020 **Study Committee Meeting** – 1:00 pm – CCC (Marquardt, Sorensen, Ward) No observers
Review information from December 16, 2019 Board Meeting
Discussion - purpose of committee
Report/update on area town/county meetings re: CAFOs, moratoriums, draft ordinances
Identify future tasks of committee
Next meeting: Review Trade Lake Ordinance, and other area proposed and/or approved ordinances.
Approve purpose of committee statement
Meeting adjourn 2:45

February 5, 2020 Joint meeting Laketown / Sterling – Cancelled by Polk County
Brian Kaczmarski – Polk County Public Health, Director ~ Information regarding research on public health impacts of (swine) CAFOs
Also presented Dec. 11, 2019 Polk County ES Committee Meeting – YouTube recording

February 10, 2020 Film "Right to Harm" – SCF Public Library – hosted by St. Croix River Association
Open to the public (Marquardt attended)

February 20, 2020 **Sterling Study Committee Meeting** – 1:00 pm – CCC (Marquardt) No observers.

March 12, 2020 **Study Committee Meeting** –1:00 pm - CCC (Marquardt, Lundgren, Ward) No observers
Committee tasks and responsibilities
Share Collected Data
Laws and Regulations: Define / identify
Federal Laws
State of Wisconsin (DNR and DATCP)
Polk County
Town of Sterling
Meeting adjourn 2:30

May 13, 2020 Presentation ~ Attorney Nick Vivian, Hudson, WI. (Marquardt attended via Zoom)
Polk County ES meeting. Information regarding CAFO licensing – County and Town government. Mr. Vivian helped develop Trade Lake, Burnett County develop a CAFO Operations Permit Ordinance.
This work laid groundwork for the ordinance passed by Town of Eureka, January 2020.

June 11, 2020 **Sterling Study Committee Meeting** – 1:00 pm - CCC - (Marquardt, Lundgren, Ward)
District 3 Supervisor Steve Warndahl - observing
Share Collected data
Update / information surrounding townships and Polk County ordinance
Discussion / Action ~ preliminary steps to request 6-month extension of Moratorium on Sterling Livestock Facilities Licensing (October 2020 – March 2021)
Meeting adjourn 2:45pm

June 15, 2020 Town of Sterling Board Meeting ~ Study Committee discussion regarding 6-month Moratorium extension (October 2020 – March 2021)

July 09, 2020 **Sterling Study Committee Meeting** – 1:00 pm – CCC (Marquardt) – No observers

August 12, 2020 **Sterling Study Committee Meeting** – 1:00 pm – CCC (Marquardt) – No observers

September 21, 2020 Town of Sterling Board meeting - Board approves 6-month Moratorium extension (October 2020, May 2021)

October 14, 2020 **Study Committee Mtg** – 1:00 pm – CCC (Marquardt, Sorensen, Lundgren) No observers
Share collected data / reports / committee members comments
Update – Polk County – area towns
Define Operations Permit / Conditional Use Permit
Shoreland Zoning (Marcia)
Timeline for completion ~ Moratorium report (Allysse)
Contact Laketown Study Committee and District 3 Supervisor S. Warndahl (Ben)
Possible meeting October 28, 2020
Meeting adjourned 2:30pm

October 26, 2020 Invitation to observe Laketown Study Committee Meeting – 6:00 pm (Zoom meeting)
Attorney Paul Mahler will be presenting explanation / discussion of Town of Eureka Operations Ordinance No. 20-01
This meeting was cancelled.

October 28, 2020	**Sterling Study Committee Meeting** – 1:00pm – CCC (Marquardt) No observers
November 11, 2020	Sterling Study Committee Meeting – 1:00 pm – CCC (Cancelled)
December 28, 2020	**Sterling Study Committee Meeting** – 1:00 pm – CCC (Marquardt, Sorensen)
January 20, 2021	**Sterling Study Committee Meeting** – 1:00 pm – CCC (Marquardt, Sorensen)
February 10, 2021	**Sterling Study Committee Meeting** – 1:00 pm – CCC (Marquardt, Sorensen, Lundgren) Share collected data / updates Surface water, Ground water, St. Croix Watershed (Marcia) Land type, land use, local agriculture, local meat producers (Ben) Township roads, transportation regulations, topography) Discuss additional topics for research Adjourn 2:30pm
March 10, 2021	**Sterling Study Committee Meeting** – 1:00 pm – CCC (Marquardt) No observers
April 07, 2021	Sterling Study Committee Meeting – 1:00 pm – CCC (Cancelled)
April 20, 2021	Town of Sterling Special Board Meeting Board approval of 6-month extension ~ Moratorium on Livestock Facilities Licensing (May 2021-October 2021)
April 21, 2021	Factory Farms in Polk County 7:00 – 8:30 pm Zoom meeting (Marquardt) Hosted by Polk County Association of Lakes and Rivers – recorded – available YouTube Jason Kjeseth – Polk County Zoning Administrator Andrew Marshall -Attorney Lisa Doerr – Wisconsin Farmers Union – Polk/Burnett Chapter
May, 2021	Committee Ben Lundgren respectfully withdrew from Livestock Study Committee – Unable attend meetings (past 7 months)
July 14, 2021	**Sterling Study Committee Meeting** – 1:00 pm CCC (Marquardt, Sorenson, Ward) Approve Moratorium Report
July 26, 2021	Town of Sterling Board Meeting – 7:00 pm Submit Moratorium report on Livestock Facilities Licensing Facilities to Board Accepted by – Chairman Wilson and Supervisor Ward. Supervisor Hinkle absent.
Sept. 09, 2021	Town of Sterling, Polk County, WI ~ Moratorium on Large-Scale Livestock Facility Study Committee Report on Town of Sterling website.

Sterling Study Committee - did not meet Dec. 2019 ~ April, May, September, November 2020 ~ April - June 2021
In accordance with Wis. Stat. 19.84 ~ all meetings were posted in (3) designated township locations.
Meetings that were posted/cancelled ~ additional notice was posted 24 hours in advance of scheduled meeting.

10. Citations

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Air Health Impacts

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