Developing a Nutrient Management Plan For a Livestock Siting Application

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WFAPM Conference

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Lessons Learned Livestock Siting and 590

- What are the rules?
- What is the process?
- What are the challenges?

s. 93.90 Wis. Stats.

Ch. ATCP 51 Wis. Adm. Code

Siting Standards Application Worksheets

Standard	Is this new?
Worksheet 1: Animal Units	**No**
Worksheet 2: Odor Management	**Yes**
Worksheet 3: Waste and Nutrient Management	**No**
Worksheet 4: Waste Storage	**No**
Worksheet 5: Runoff Management **-- Animal Lot** **-- Feed Storage**	**No** **Yes (if not CAFO)**

A DNR WPDES permit can be substituted for Worksheets 3, 4 and 5.

Management Plans

- Employee training (Required)
  - Cover manure management and odor control
  - Frequency & who the trainers are
- Incident response (Required)
  - Cover spills and odor events
  - List contacts
  - Describe procedures
- Advanced Odor management (Optional)

Points to Remember. . .

- Livestock siting is a LOCAL permit, that uses STATE standards
- Law DOES NOT require a local government to regulate livestock operations – local decision
- The state will not issue siting permits in absence of local regulation

45 Local Siting Ordinances

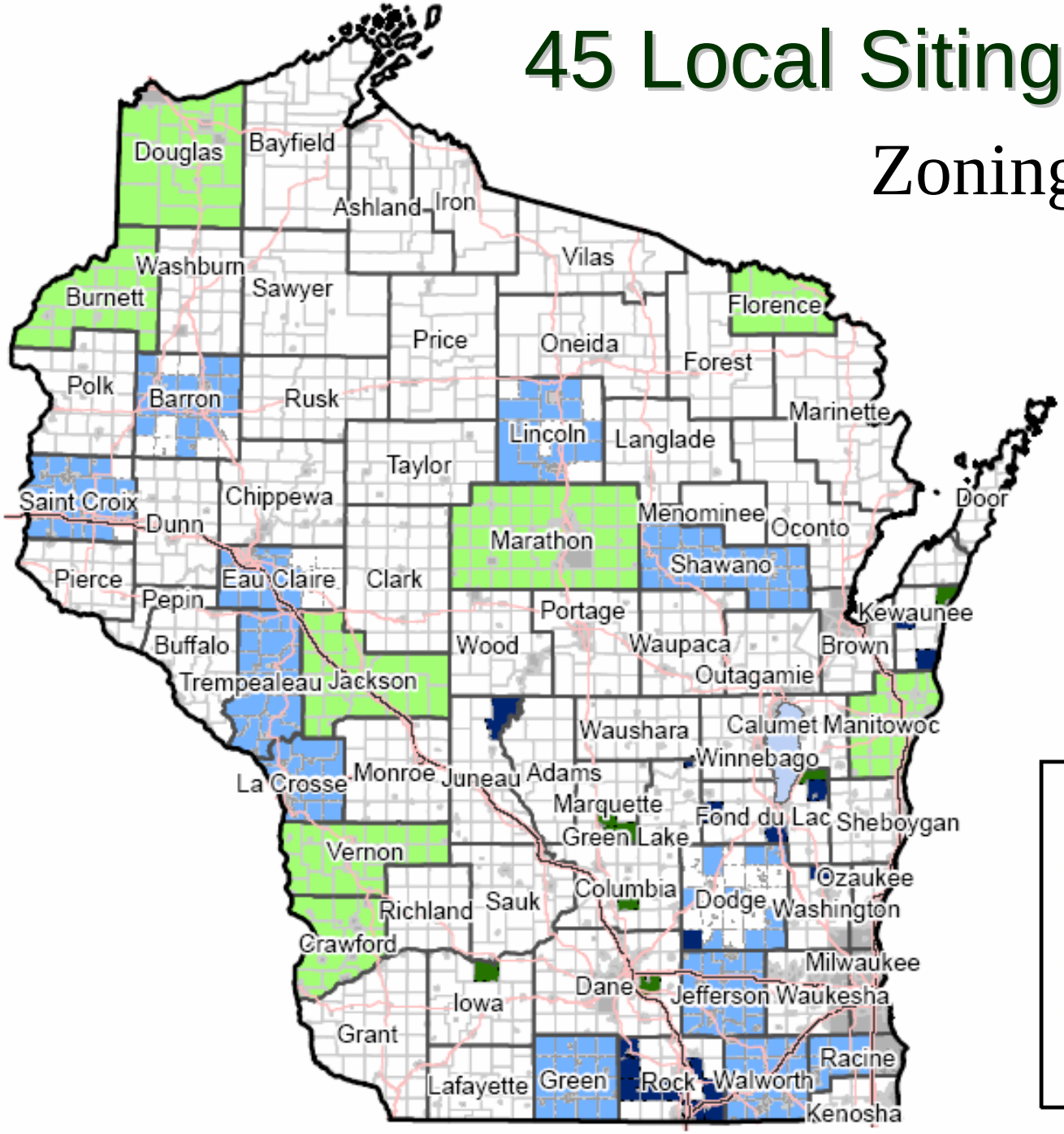
Zoning and Licensing

20 County

24 Town

1 City

More Expected



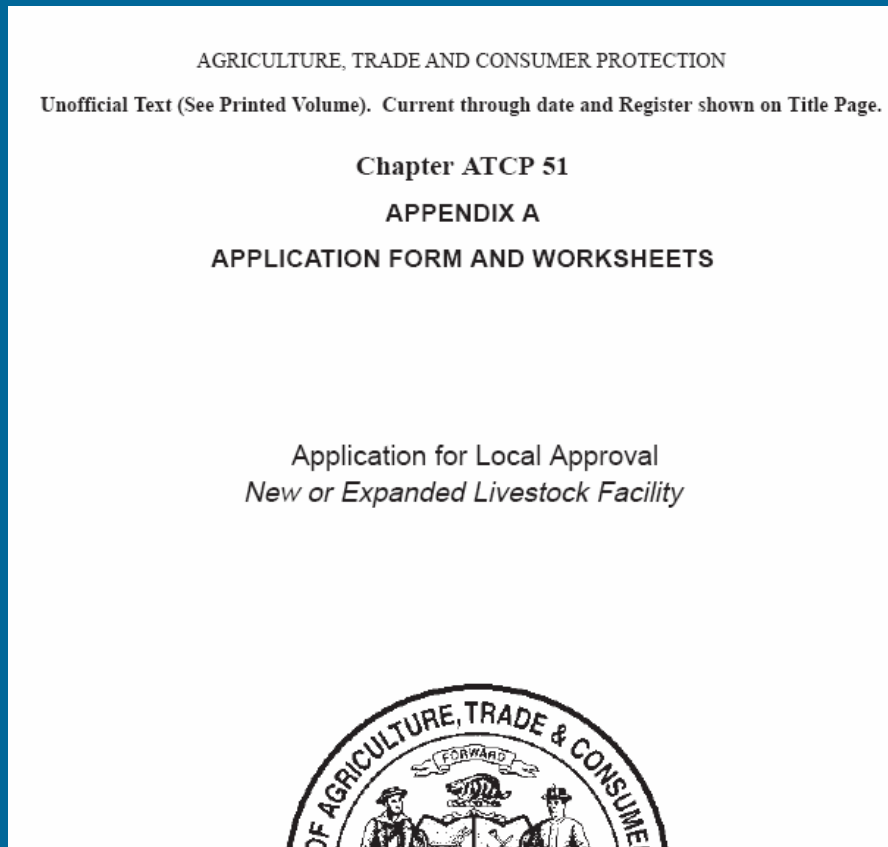
Livestock Siting Legend

- Town Zoning Ordinance
- Town Licensing Ordinance
- County Zoning Ordinance
- County Licensing Ordinance

Who Reviews a Siting Application?

- Local government – for permit decision
  - LCD, zoning, town board…

- Maybe others as well?
  - Local residents
  - Opposition groups
    - T. Magnolia
  - Experts hired to critique your plan
    - Crawford County



AGRICULTURE, TRADE AND CONSUMER PROTECTION

Unofficial Text (See Printed Volume). Current through date and Register shown on Title Page.

Chapter ATCP 51

APPENDIX A

APPLICATION FORM AND WORKSHEETS

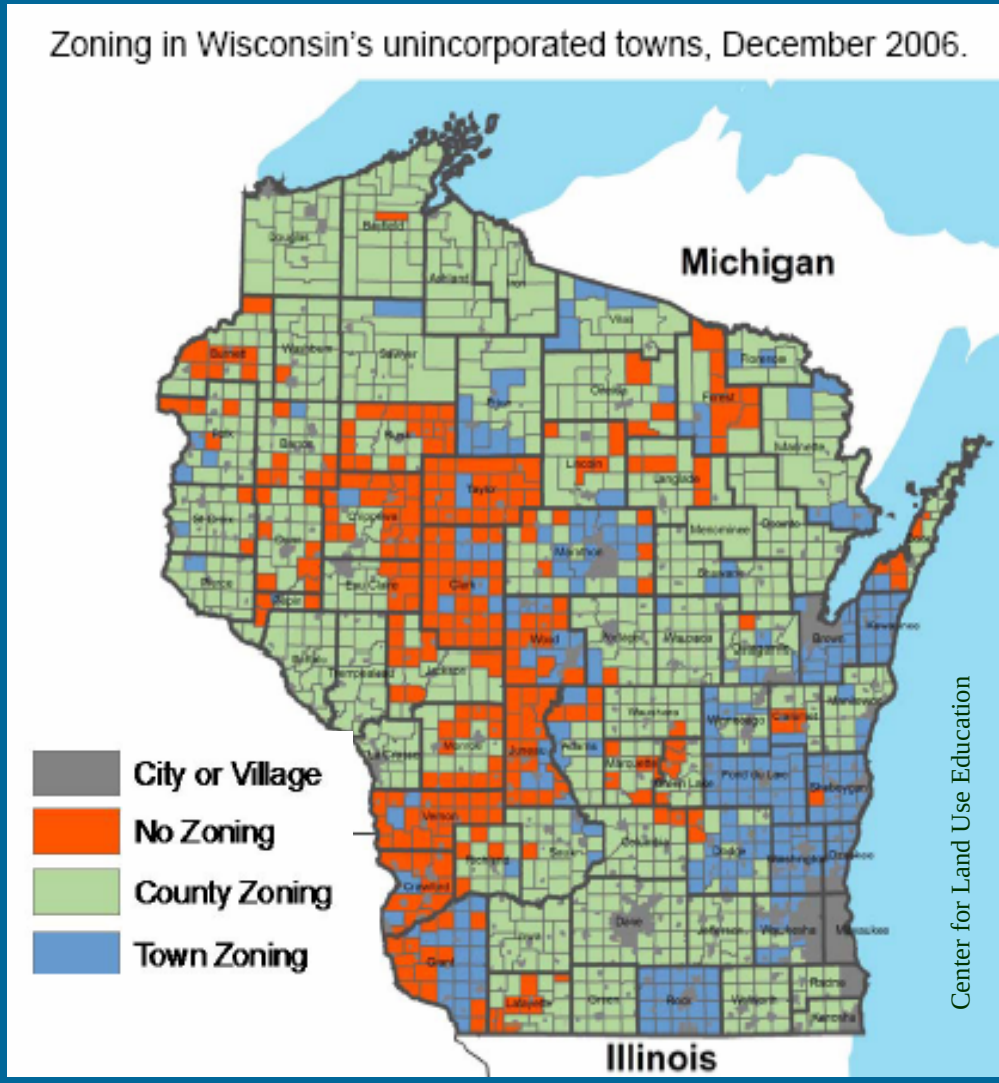
Application for Local Approval

New or Expanded Livestock Facility

Old McDonald Had a CAFO?

Siting is Only One Tool Used to Implement local Planning Goals

- Production agriculture
  - Cattle, swine, poultry, sheep & goats
- Zoning?
  - Vernon County



Public Perception

- **Fear of change**
  - Not just livestock, wind farms, Walmart, mines…
- **Siting can be controversial**
  - Infrastructure & environmental impacts
  - Land & lifestyle values

The Most Controversial Siting Standard

Nutrient Management

Nutrient Management Challenges

- Manure spills
- Fish kills
- Well and groundwater contamination
- Perceived lack of local enforcement
- Perception state standards are inadequate

Feedlot Pollution in Wisconsin:

Spills, Kills and Other Horror Stories

Picture Source: Izaak Walton League of America Fish Kill Advisory Network

What is Five Ninety?

CCA

PI

P

?

SNAP

EAZ

CNMP

CSP

NRCS

313

N

WQMA

?

EQUIP

A2809

LCD

CAFO

WPDES

?

?

Public Notice is Required

Can you explain NM to people unfamiliar with

- Agriculture?
- Manure management?

There Might Be A Public Hearing

Waste and Nutrient Management: Worksheet 3

Part A: Waste generation & storage summary

– How much manure?

Part B: Land base for applying nutrients

– Where will it go?

Part C: Nutrient management checklist

– Represents the 590 NM plan components

Part A: Waste Generation Worksheet

You are NOT required to complete this worksheet if you already hold a *WPDES* permit for the proposed *livestock facility* (for the same or greater number of *animal units*). Simply check the following box, sign at the bottom of this page, and include a copy of the *WPDES* permit with your application.

☐ I enclose a copy of my *WPDES* permit in place of Worksheet 3.

Specify a single livestock type (dairy, beef, swine, etc.). *Use a separate worksheet for each livestock type.*
Livestock Type: dairy

Description of Storage	Column A Waste Storage Capacity (Gallons or Tons)	Column B Source of Waste (Animal Waste, Wastewater, Leachate, etc)	Column C Average Annual Volume of Waste Produced from Each Source (Gallons or Tons)	Column D Total Average Annual Volume Waste Produced (Gallons or Tons)	Column E Storage Duration in Days (Column A divided by Column D times 365 days)
Example: Unit 1 - lagoon	*5,000,000 gallons*	*Animal waste* *Wastewater* *Leachate*	*4,000,000 gallons* *1,000,000 gallons* *2,000,000 gallons*	*7,000,000 gallons*	*260 days*
Unit 1 **Existing**	**680,000**	**Animal waste** **Wastewater** **Leachate**	**842,700** **included** **0**	**842,700**	**295**
Unit 2 **New Storage**	**5,300,000**	**Animal waste** **Wastewater** **Leachate**	**5,500,000** **1,175,000** **2,500,000**	**9,175,000**	**210**
Unit 3					

Part B: Land Base for Applying Nutrients

Manure production corresponds to acreage needed?

Arm-lwr- 11/04 August 2005 — **Worksheet 3 (continued)**

Part B – Land Base for Applying Nutrients

1. Enter total *animal units* in proposed *livestock facility* (**from worksheet 1**): **876**.

2. What percentage of the waste from the *livestock facility* will be:
   a. Applied to land: **100**%. Attach map showing where waste will be applied to land.
   b. Processed and sold as commercial fertilizer, under a fertilizer license: _____%.
   c. Disposed of in other ways: _____%. Describe ways: _____

3. Multiply the percent in line 2a by the number of *animal units* in line 1. Result (# of *animal units*): **876**

4. Acres of cropland currently available for land application (owned, rented, or landspreading agreement): **1000**

5. Divide # of acres in line 4 by # of *animal units* in line 3 to obtain ratio of acres to *animal units*: **1.14**

6. Is the ratio in line 5 equal to or greater than the applicable ratio in Table 1? **No**

If YES, and if the # of *animal units* in line 1 is less than 500, you need NOT complete Part C. Otherwise, complete Part C.

Table 1: Acreage per *Animal Unit*

Animal Type	Acres per *Animal Unit**
Dairy	1.5
Beef	1.5
Swine	1.0
Chickens/Ducks	2.5
Turkeys	5.5
Sheep/Goats	2.0

* NOTE: A *livestock facility* is NOT required to attain or exceed this ratio of acres to *animal units*. But IF your

This applicant is over 500 AU and must complete Part C.

Part C: Nutrient Management Checklist

- Must answer questions
  - Yes or NA
- Signature of Qualified Nutrient Management Planner
- Signature of applicant

arm-lwr- 11/04 August 2005 **Worksheet 3 (continued)**

Part C – Nutrient Management Checklist

Instructions: All applicants must submit this checklist unless exempted under Part A or B.
The checklist is based on *NRCS* Technical Guide Nutrient Management Standard 590 (September 2005)

County Name:	Date Submitted:	Township (T. _____ N., S.) – (R. _____ E., W.)
Cropland Acres: (owned, rented, or with manure spreading agreement)		Name of livestock operator submitting checklist:

	Yes	NA
1. Are the following field features identified on maps or aerial photos?	X	
a) Field location, soil survey map unit(s), field boundary, and field identification number	X	
b) Areas prohibited from receiving nutrient applications: Surface water, established concentrated flow channels with perennial cover, permanent non-harvested vegetative buffer, non-farmed wetlands, sinkholes, lands where established vegetation is not removed, nonmetallic mines, and fields eroding at a rate exceeding tolerable soil loss (T)	X	
c) Areas within 50 feet of a potable drinking water well where mechanically-applied manure is prohibited.	X	
d) Areas prohibited from receiving winter nutrient applications: Slopes > 9% (12% if contour-cropped); Surface Water Quality Management Area (SWQMA) defined as land within 1,000 ft of lakes and ponds or within 300 ft of perennial streams draining to these waters, unless manure is deposited through winter gleaning/pasturing of plant residue and not exceeding the N and P requirements of this standard	X	
e) Areas where winter applications are restricted unless effectively incorporated within 72 hours: Land contributing runoff within 200 feet upslope of direct conduits to groundwater such as a well, sinkhole, fractured bedrock at the surface, tile inlet, or nonmetallic mine	X	
f) Sites vulnerable to N leaching: Areas within 1,000 feet of a municipal well, and soils listed in Appendix 1 of the Conservation Planning Technical Note WI-1	X	
2. Are erosion controls implemented so the crop rotation will not exceed T on fields that receive nutrients according to the conservation plan or WI P Index model?	X	
3. Check the methods below used to determine field soil nutrient levels:		
a) Soil samples were collected and analyzed within the last 4 years according to UW Publication A2100 recommendations	X	
b) For fields not meeting (a.) above, soil test phosphorus levels are assumed to be greater than 100 ppm soil test P. *		X
c) For fields not meeting (a.) above, preliminary estimates of soil nutrients were determined using limited soil sampling (> 5 acre per sample) but analyzed by a DATCP certified laboratory. *		X
*For fields with soil nutrient levels determined under (b) or (c), the applicant must collect and analyze soil samples meeting the requirements of A2100 within 12 months of siting approval, and revise the nutrient management plan accordingly.		
4. Using the field's predominant soil series and realistic yield goals, are planned nutrient application rates, timing, and methods of all forms of N, P, and K listed in the plan and consistent with UW Publication A 2809, *Soil Test Recommendations for Field, Vegetable and Fruit Crops*, and the 590 standard?	X	
5. Do manure production and collection estimates correspond to the acreage needed in the plan? Are manure application rates realistic for the calibrated equipment used?	X	
6. Is a single phosphorus (P) assessment of either the P Index or soil test P management strategy uniformly applied to all fields within a tract?	X	
7. Are areas of concentrated flow, resulting in reoccurring gullies, planned to be protected with perennial vegetative cover?	X	
8. Will nutrient applications on non-frozen soil within the SWQMA comply with the following?	X	
a) Unincorporated liquid manure on unsaturated soils will be applied according to Table 1 of the 590 standard to minimize runoff	X	
b) One or more of the following practices will be used: 1) Install/maintain permanent vegetative buffers, or 2) Maintain greater than 30% crop residue or vegetative coverage on the surface after nutrient application, or 3) Incorporate nutrients leaving adequate residue to meet tolerable soil loss, or 4) Establish fall cover crops promptly following application	X	
9. Is a narrative included which describes proposed manure collection, transportation, and application methods?	X	

I certify that the documentation supporting this checklist is complete and accurate:

Signature of *Qualified Nutrient Management Planner*, other than applicant: _____
(qualified by 1. NAICC-CPCC, 2. ASA-CCA, 3. ASA-Professional Agronomist, 4. SSSA-Soil Scientist)

Signature of Applicant or Authorized Representative: _____

Key Differences
Siting and Non-Siting NM Checklist

- Qualified planner must sign worksheet
- ATCP 51 limits winter spreading to standards adopted by ordinance- Part C.1(d)
- Allows 12 months to comply with soil testing requirements of 590 Standard - Part C.3(b) & (c)
- ATCP 51 adds a narrative on manure handling - Part C.9

Additional Documentation?

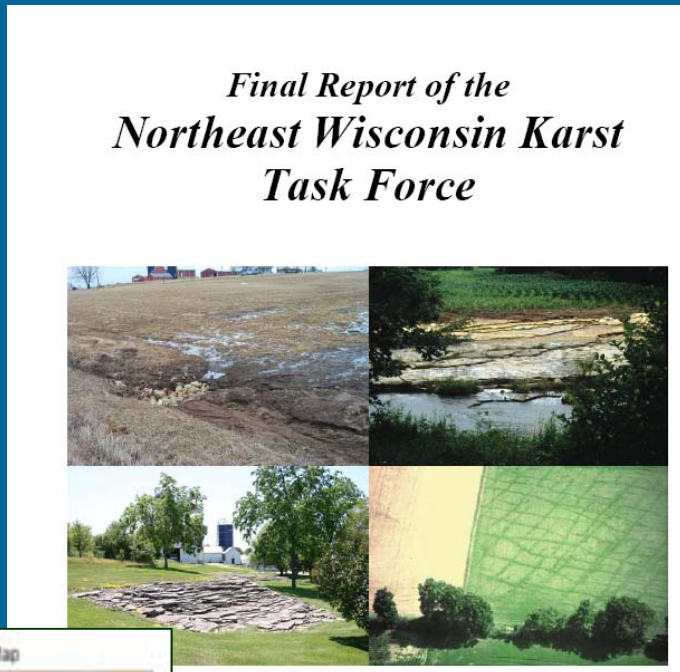
- Local government can request documentation to verify checklist answers
- Can deny the permit if a planner's documentation does not reasonably substantiate the answer
- Can monitor compliance and require annual NM plan updates

Are planned nutrient applications consistent with UW Pub. A-2809 *Soil Test Recommendations for Field, Vegetable and Fruit Crops,* **and** the 2005 NRCS 590 NM standard?

- Credit all nutrients?
  - Where's the Beef?
- Is a narrative included which describes proposed manure collection and application methods?

How Does the Plan Deal With

- Groundwater features?
  - Wells, sinkholes, shallow soils…
- Spreading restrictions?
  - Waterways, winter…



Final Report of the
Northeast Wisconsin Karst Task Force

February 9, 2007

Edited By: Kevin Erb and Ron Stieglitz

Final Thoughts

- Review and understand the standards
- Learn how the local process works
  - All ordinances and regulations
  - Zoning
  - Permitting procedures: timeframes, fees, appeals
  - More stringent standards
  - Post-permit enforcement
  - Consider potential obstacles
- Meeting the standards = permit

Questions?

- **Website: http://livestocksiting.wi.gov**

- **Program Manager**
  - Mike Murray, 608-224-4613 (All Questions)
- **Engineering**
  - Steve Struss, 608-224-4629 (Engineering & Odor)
- **Other Contacts:**
  - Richard Castelnuovo, 608-224-46087 (General)
  - Sue Porter, 608-224-4605 (Nutrient Management)