

A G E N D A

Livestock Siting Technical Expert Committee

Tuesday, January 29, 2019

9:00 a.m. to 3:00 p.m.

DATCP
Board Room 106
2811 Agriculture Drive
Madison WI 53718

- 9:00 a.m. **Call to Order**
- 9:05 **Review of December 21st Meeting Notes:** Committee Members, Advisors, and DATCP Staff
- 9:15 **Overview of Issues Related to Odor Management and Setbacks:** Presented by DATCP Staff
- Odor management standard in ATCP 51
 - 2014-2015 TEC recommendations
 - Proposed replacement of the current odor management standard
 - Use of the OFFSET model in current and proposed systems for managing odor
 - Proposed setbacks and odor management plans
- 10:30 **Break**
- 10:45 **Discussion of First Committee Assignment – Odor Management and Setbacks**
- 12:00 p.m. **Lunch**
- 12:45 **Continue Discussion**
- 1:50 **Break**
- 2:00 **Discussion of Issues Relating to Livestock Siting Procedures – Permit Modification and Monitoring Compliance** (time permitting)
- 2:45 **Wrap Up and Future Meetings:** DATCP Staff
- Summary of progress on assignment and decision on need for additional discussion
 - February / March meetings
- 3:00 **Adjourn**

Notes

Livestock Siting Technical Expert Committee

Friday, December 21, 2018

9:30 a.m. to 1:30 p.m.

DATCP

Board Room 106

2811 Agriculture Drive

Madison WI 53718

Present: Mark Borchardt, Kevin Beckard (by phone), Chris Clayton (chair), Richard Castelnuovo, Tonya Gratz (by phone), Brian Holmes, Jerry Halverson, Mary Anne Lowndes, Chuck McGinley (by phone), David Panofsky, Bob Pofahl, Matthew Ruark, Robert Thiboldeaux, Patrick Schultz, John Vosberg, Gretchen Wheat, Keith Ripp, and Alex Girard.

The meeting was convened at 9:30 a.m., and began with a welcome from Secretary Sheila Harsdorf and member introductions.

Following a staff overview concerning the implementation of siting law and rule and the four year review process, staff provided a presentation on the committee procedures, expected work products, and tentative identification of issues. To help members understand issues related to engineering technical standards, the group received an update on the changes to key NRCS technical standards.

The following items were discussed:

- The limitations and lack of research to support the OFFSET model used to predict odor.
- The annoyance free curves (89% v. 94% v. 96%) used to define tolerable odor when using OFFSET.
- The issues surrounding the development of research to show the efficacy of new odor reduction technologies.
- The need for siting standards to account for changes in farm size since the siting standards were first adopted. (e.g. 76 of 176 permitted facilities are over 1,000 animal units)
- DNR's focus on review of mid-size CAFOs (300 – 999 AUs).
- Issuing siting permits to facilities with active discharges based on the commitments made in the application to fix problems and the role of interim control practices to fix problems.
- Comparing the DNR requirements (i.e. NR 213) for permitting storage facilities that hold process wastewater to the requirements in NRCS 313 for constructing manure storage structures (e.g. greater separation distances and no in-place earth option in NR 213).
- Implications of the new requirements in NCRS 635 for constructing vegetated treatment areas, including a lower maximum annual phosphorus runoff standard of 5 lbs. instead of 15 lbs.
- Cost implications and challenges of conducting site investigations in sensitive areas (e.g. Karst) for manure storage structures as NRCS 313 now requires specialized subsurface sounding equipment in such areas.
- Cost implications and design / siting challenges versus increased environmental protection in relation to the new NRCS 635 and 313 standards.

- Manure storage leak rates and research regarding well contamination from manure storage structures located within 2,500 feet of wells.
- Managing manure spills and discharges, including events related to manure transport.
- Improving management plans to prevent manure spills and reduce the impacts.
- The role of setbacks in addressing nuisance impacts of bigger livestock operations, including limitations inherent to the setback approach.
- Establishing a setback for solid manure storage.
- Providing a variance mechanism for setbacks through the rule, as opposed to allowing local governments to approve variances case by case through the local ordinance.
- Options to allow flexibility in meeting setbacks, including the adoption of odor reduction practices.
- Differentiating setbacks from livestock facility structures to exclusive agricultural land versus residences and high use buildings such as schools and businesses. (See manure irrigation task force recommendations for example language.)
- Appropriate response to changes in technology and the management of large farms such as agitation boats for manure storage.
- Questions about the limitations of facility expansions, including carrying capacity of a site.
- The latest developments in the management of feed storage runoff, including research that is changing the concept of treating the “first flush.” (See research from Rebecca Larson, UW-Madison.)
- The challenges of monitoring compliance and follow-up after approval of siting permits; in particular, ensuring operations maintain promised adoption of odor control practices.

Assignment
Livestock Facility Siting Technical Expert Committee
January 2019

Scope of First Assignment

The committee's assignment covers issues related to odor management and setbacks. Under ATCP 51, predicted odor generation, odor control practices, and setbacks from livestock housing, manure storage structures, and animal lots are used to determine a facility's odor score. In 2017, the department proposed to use these factors to establish a system based on setbacks to manage odor from permitted livestock facilities.

During the meeting, DATCP staff will review the odor management standard in ATCP 51 and related recommendations made by the 2014-2015 Technical Expert Committee. Also, DATCP staff will present on the technical elements of changes proposed to the odor management standard. The committee will address the issues, below, and determine whether their recommendations need to be updated based on the department's draft rule and/or more recent developments.

Notes will be prepared by DATCP staff reflecting the committee's discussions and recommendations.

Issues for Consideration: Setbacks and Odor Management

Background: [ATCP 51.12](#) establishes maximum setback distances that local governments may impose on permitted livestock facilities through a local siting ordinance:

- No more than 350 feet for manure storage structures from the property line and road right of ways for all sized livestock facilities.
- No more than 100 feet to 200 feet, depending on the size of the livestock facility, for other structures including animal housing, animal lots, milking parlors and feed storage from property line and road right of ways.

Separation distance is generally regarded as the best method to reduce the impacts on neighboring property owners and land uses. Distance dilutes odors through mixing with atmospheric air. Wind speed, direction, atmospheric conditions, surrounding land use and topography all affect odor impacts.

The maximum setbacks were established as a compromise to protect the interests of bordering property owners and neighboring land uses while allowing for the expansion of livestock operations.

The odor standard, which accounts for separation distance between structures and the nearest neighbor (as well as odor control practices), generally determines whether or not and where manure storage, housing, feed storage or animal lots can be sited on a livestock operation. Since the odor standard relies on several variables to predict odor, in some instances it has not proven to be as reliable as distance.

In 2014-2015, certain questions posed to the technical committee focused on the adequacy of the maximum setbacks in providing protection to neighbors from the impacts of livestock operations while still allowing for new and expanded livestock operations. In response, the technical committee offered the following recommendations:

- Require a greater road and property line setback than 350 feet for new or substantially modified manure storage structures located on livestock facilities over 1,000 animal units.
- Require greater setbacks for livestock structures on livestock facilities under 1,000 AUs, unless these facilities use established methods to document how they will manage odor to secure a passing odor score.
- To provide greater protection for neighbors, increase the property line/road setback distance for structures (such as feed storage) that may have nuisance impacts, applying increased setbacks to occupied buildings in addition to property line setbacks, and accounting for schools and other high density uses in establishing a setback.

[ATCP 51.14](#) requires that certain livestock facilities have a passing odor score calculated according to [Worksheet 2](#). The odor score is a product of OFFSET, a model that estimates setback distances for livestock structures according to various odor-annoyance-free frequencies. The odor model in ATCP 51 produces an odor score at a proposed facility by combining predicted odor from animal housing, manure storage structures, and animal lots, and the numbers used in the model were established in 2004 based on the best available science. Since that time, research and program implementation have shed new light on odor generation numbers and odor control methods used to calculate odor, and as a result, the last technical committee recommended recalibrating the odor model to more accurately reflect the odor generated by livestock facilities.

[ATCP 51.14\(2\)\(c\)](#) and [Worksheet 2 \(Appendix A, 90-22\)](#) exempts operators from the odor standard if their proposed livestock facilities are: 1) a new facility with fewer than 500 animal units; 2) expansions less than 1,000 animal units, or 3) have livestock structures at least 2,500 feet from the nearest affected neighbor. "Affected neighbors" ([ATCP 51.01 \(2\)](#)) are residences or "high-use buildings" ([ATCP 51.01 \(16\)](#)) other than those owned by the livestock operator or by persons who agree to a shorter setback.

All applicants for a siting permit are required to submit an environmental incident response plan that outlines procedures to respond to incidents including overflows and spills from waste storage facilities, catastrophic system failures, manure spills during transport and application, movement of manure during or after application, catastrophic mortality disposal emergency, and odor complaints. The plan must include contact information for the person at the operation responsible for handling concerns and mobilizing first responders.

Permit applicants must also submit an employee training plan covering training on nutrient management, odor management, runoff management, manure and waste handling, employee safety, and environmental incident response. The plan must provide details about training related to the employees to be trained, the form and frequency of training, and training

presenters. Operators must hold at least one training per year, and have a system for recording employee attendance.

A permit applicant may prepare and submit an optional odor management plan, which must address activities to reduce community conflict; practices used to reduce dust; practices used to reduce odor from feed storage leachate; practices used to conserve water; and practices used to reduce odor from dead animals.

The odor management standard, as developed in the rule, is based on the research used to develop the OFFSET model, but in a way that may compromise the accuracy or effectiveness of the tool, including:

- Providing exemptions for new facilities with fewer than 500 animal units and expansions with less than 1,000 animal units, which was based on the assumption that these facilities are not large generators of odors and typically have less flexibility and financial resources to comply with the odor standard than larger livestock operations.
- Assigning an odor generation number (two choices) to manure storage structures based on the duration of storage, which tends to understate odor. The technical committee advised that the more appropriate method for determining odor generation is based on the surface area of manure storage structures.
- Extrapolating from six different odor-annoyance-free frequency data sets between 91% and 99% to produce an 89% odor-annoyance-free frequency data curve. The odor model in ATCP 51 generates an odor score based in part on achieving an odor-annoyance-free frequency of 89% or 91% at the neighbor's residence closest to the facility. The higher odor-annoyance-free frequency applies when a "high-use building" is located within 1,300 feet of the facility. According to a study on the development of the OFFSET model for determining setback distances from livestock facilities, the authors suggest using a 91% odor-annoyance-free frequency for land uses with fewer than two rural residences and a 94% frequency for land uses with fewer than five rural residences.
- Giving 80 or 100 points of credit toward a passing odor score of 500 points, depending on whether the applicant completes an optional odor management plan (20 points) in addition to two required management plans (80 points).
- Weighting odor modeled from multiple sources, or livestock structures, to estimate the impact from the facility on neighbors.
- Establishing odor reduction values for some control practices that are not supported through research.

The 2014-2015 technical committee recommended the following changes to the odor management standard:

- Retain the exemptions to the odor standard.
- Make adjustments to odor generation numbers and odor control practices based on the most current science-based information. In certain cases, new odor control practices or documented sources of odor should be added, and other cases the credits for odor control practices should be reduced or eliminated.

- Develop more detailed specification, consistent with available NRCS standards, for odor control practices such as diet manipulation, chemical and biological additives, compost, solids separation and reduction, and natural crust.
- Require all applicants to complete plans related to incident response, employee training, and odor management.

Based on these recommendations, the department tested a revised odor model on previously permitted livestock facilities and found that several would not have earned a passing odor score at the time they applied for a permit. Revising ATCP 51 based on the committee's recommendations brought to light other issues with the odor model, including: the lack of active and robust research and testing related to the OFFSET model including evaluation of new technologies; limitations in adapting OFFSET to model odor from a whole farm; the relative effectiveness of the odor standard in managing odor impacts, compared with other approaches (e.g. setbacks, odor management plans).

The department proposed revisions to the rule, seeking to address issues with the odor model while addressing the technical committee's recommendations related to setbacks and odor management. The draft rule proposed the following changes:

- Requires that new and expanded manure storage and high odor housing meet larger setbacks (600 to 2,500 feet) based on animal units, with distances based on the same model (OFFSET) that was the foundation of the original odor standard.
- Allows livestock facilities to consider separate clusters when calculating setbacks.
- For new or expanded manure storage structures and certain types of livestock housing, the new odor standard provides operators credit for odor control practices in the form of a reduction to setback requirements.
- Requires compliance with more detailed specifications to obtain a reduction in setbacks.
- Does not add new sources of odor that generate low levels of odor (e.g., sand and solid separation v. manure storage).
- Retains DATCP process to approve innovative odor control practices and the concept of clusters.
- Replaces the Worksheet 2 odor standard with increased setbacks and expanded odor management plans.
- Requires expanded odor management plans if property line setback are less than 600 feet for existing manure storage and 400 feet for housing.
- Redesigns odor management plans and make them mandatory in certain situations.
- Expands the content of odor management plans to include odor control practices for existing and low odor sources, and implement a new system for documenting and retaining records concerning the operation and maintenance of odor control practices.

Questions for the Technical Expert Committee:

1. From a technical standpoint, is replacement of the odor standard warranted based on the following:

- a. The extensive modifications to OFFSET that change the accuracy and effectiveness of the model.
 - b. The relative effectiveness of the odor standard in managing odor impacts, compared with other approaches (setbacks, odor management plans)?
2. Is there sufficient technical and other justification to support the proposed system for odor management that focuses on setbacks?
 - a. Is the method for setting the setback distances proposed in the rule based on sound science (e.g. the OFFSET model)?
 - b. Is there a sufficient basis in the research to support the reduction of setbacks based on odor control practices and are the reductions provided in the draft rule appropriate based on that research?
3. How can odor management plans be improved to be a more effective tool in managing odor (e.g. additional requirements)?
4. What kind of documentation should operators prepare to show that management plans are being followed?
5. Do you have other recommendations?