

Livestock Facility Siting Technical Expert Committee

Four-Year Review of ATCP 51: Report and Recommendations to the DATCP Secretary

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Prepared by Chris Clayton

Bureau of Land and Water Resources
Department of Agriculture, Trade and
Consumer Protection

Overview

The Technical Expert Committee (TEC) was convened as part of the Department of Agriculture Trade, and Consumer Protection's (DATCP) required four year review of the livestock facility siting standards under ch. ATCP 51, Wis. Admin. Code (siting rule or ATCP 51). In December 2018, DATCP Secretary Sheila Harsdorf appointed eight Members and eight Advisors to serve on the committee, most of whom served on the 2014-2015 technical expert committee. Composed of Members and Advisors with expertise in nutrient management, engineering, odor, setbacks, and public health, the committee was tasked with making recommendations on technical standards in the siting rule.

Chaired by DATCP staff, the committee met on four occasions from December 2018 to March 2019. At its first meeting, the TEC was presented with a list of issues to frame future discussions. Specifically, committee members were asked to consider what changes they would make to their 2014-2015 recommendations based on the department's 2017 draft siting rule (proposed ATCP 51) and other developments in the last four years. Meeting materials, including the list of issues, and DATCP staff notes are located on the TEC website:

https://datcp.wi.gov/Pages/Programs_Services/LSTechExpertCom.aspx

The recommendations in this report reflect the consensus of the TEC on the issues presented for their consideration. The committee's recommendations are arranged according to the following issues: Odor Management and Setbacks, Manure and Other Waste Storage, Runoff Management, Monitoring, Completeness Determinations and Permit Modifications, and Groundwater Protections. Appendices to this report provide a more detailed description of the committee review process, a list of all committee members, and key documents referenced in this report. As required by law, this report will be forwarded to DATCP Secretary Brad Pfaff for his consideration.

Committee Recommendations

Odor Management and Setbacks

- The current odor management standard, which relies on the odor score along with the existing setback distances, should be replaced by the proposed system in the proposed ATCP 51 that incorporates setbacks based on odor generation combined with credits for odor control practices to reduce those setbacks.
 - This new approach to the odor management and setback standards should be simpler and designed to offer livestock operators some level of flexibility and options.
- If the current odor standard is discontinued, the 350-foot property line setback for manure storage structures (except those that store solid stacked manure) do not provide adequate separation to protect residences, high use buildings and high use areas.
 - "High-use buildings" are defined in ATCP 51.01(16) as "a residential building that has at least 6 distinct dwelling units; a restaurant, hotel, motel, or tourist rooming house; a school building; a hospital or licensed care facility; or a non-farm business or workplace that is open at least 40 hours a week."

- High use areas such as playgrounds, beaches, parks, municipal boundaries should be protected from odor consistent with the definition in Wisconsin Manure Irrigation Workgroup report, <https://fyi.extension.wisc.edu/manureirrigation/files/2017/04/Manure-Irrigation-Workgroup-Report-2016.pdf>
- Solid manure stacks and storage facilities for storing dry manure should not be treated as high odor sources in the same manner as manure storage structures, but an appropriate setback needs to be incorporated into the rule.
- A 350-foot property line setback for other high odor sources (housing types such as slatted floor, pull plug to storage and alley flush to storage) likewise does not provide adequate separation to protect residences, high use buildings and high use areas.
- To establish setbacks in lieu of the existing odor standard, it is technically supportable to use OFFSET, which may result in minimum manure storage setbacks starting at 600 feet from residences or other occupied land uses. When using OFFSET for this purpose, the annoyance-free-frequency curves chosen as inputs to the model should reflect the expectations established by zoning. For example, a higher curve (e.g. 91% annoyance-free-frequency versus 89%) should be used to account for new or expanded livestock facilities in or adjacent to residential zoning, and likewise a lower curve should be used in or adjacent to agricultural zoning.
- Increased setbacks for high odor sources should be applied in a manner that provides appropriate protections for neighbors based on reasonable uses of the adjacent land.
 - This outcome cannot be accomplished by universally applying setbacks from the property line of a livestock facility.
 - Residences, high use buildings and high use areas should be afforded more protection than cropland. Setback distances should be greater for high use buildings than for residences.
 - Zoning establishes reasonable expectations for the use of land adjacent to livestock facilities.
 - In areas with agricultural zoning, where farming is the primary use of land, setback distances should be less than those where the livestock facility is located in or adjacent to an area not zoned for agriculture.
 - For residential or other non-agricultural zoning, setbacks must protect the rights of adjacent landowners to develop their land consistent with allowable land uses.
- Livestock operators should have the option to receive credit toward reducing a setback by implementing reliable and effective odor control practices.
 - Credits applied to reduce setback distances should reflect the effectiveness of a practice in controlling odor.
 - The expert committee's past recommendations related to odor control practices should be considered in setting reductions or credits for a particular practice.
 - No credits should be applied to setback distances based on a livestock facility completing plans.

- DATCP should not provide credit for chemical or biological additives and diet manipulation since these practices may not provide reliable odor control, and compliance is difficult to document.
 - DATCP should review other odor control practices that raise questions about effectiveness and documentation (such wind breaks and frequent cleaning) to check if their use in the proposed ATCP 51 is consistent the 2014 recommendations of this committee.
 - Odor control practices can be combined to allow for additional setback reductions, understanding that multiple practices have a cumulative impact with diminishing returns on controlling odor.
 - Combining certain practices such as bottom filling and a cover for manure storage does not provide increased odor management and, therefore, should not be allowed for the purposes of setback reductions.
 - There should be a reporting and monitoring system to ensure that livestock operators implement odor control practices in accordance with specifications.
 - If local governments are permitted to reduce setbacks through variances, state law should establish clear standards for granting a variance.
- To the extent that odor management plans will assume a different role under the proposed ATCP 51, currently permitted livestock operators should be required to carry forward commitments to implement odor control practices identified in Worksheet 2 of their most recently approved siting applications.
 - The proposed ATCP 51 should provide local governments with effective mechanisms to ensure compliance with plans.
 - Model plans should remove practices and actions that do not contribute to management of odor and the resolution of odor complaints.

Manure and Other Waste Storage

- The proposed ATCP 51 should incorporate the 2017 NRCS 313 standard for waste storage structures.
 - After discussing the pros and cons of adopting the new standard, including the added protections for groundwater, the group agreed that it should follow the precedent of adopting the latest technical standard (2017) in absence of a compelling reason to do otherwise.
- As part of incorporating the 2017 NRCS 313 standard, DATCP should evaluate other NRCS standards related to waste storage (NRCS 317 Composting, NRCS 318 Short Term Storage, and NRCS 520, 521, 522 Pond Sealing and Liners), to determine if these technical standards should be incorporated into the proposed ATCP 51.
- Waste storage facilities designed to handle leachate and other non-manure wastewater should be designed to meet the 2017 NRCS 313 standard, and the proposed ATCP 51 should include a notation to reflect that these facilities may need to meet additional requirements of NR 213 if they fall within DNR's jurisdiction.

- The NR 213 has additional requirements including a five-foot separation from bottom liner, differences in liner specifications, and restrictions on in situ earth liners.
- State rules (e.g. NR 213, ATCP 51) affecting the storage of leachate and process wastewater should be updated to have consistent requirements.
- The proposed ATCP 51 should not require livestock operators to have manure storage based on the size of livestock facilities. Instead, compliance with 2015 NRCS 590 should be the focus of manure management. (The 2014-2015 TEC recommended incorporation of the 2015 NRCS 590 standard into ATCP 51.) Any concerns about the risks of manure spreading, in particular during winter, should be considered in the context of the nutrient management standard and related spreading restrictions.

Runoff Management

- For the purposes of determining an acceptable discharge from existing animal lots, the proposed ATCP 51 should follow a prescriptive approach based on a model that estimates phosphorous runoff and not rely solely on the professional judgement of individuals authorized to certify compliance on the siting application's runoff management worksheet.
 - The model should predict the likelihood of runoff discharging to a waterbody.
 - The model should not rely on subjective characterizations or inputs including the designation of the treatment area or the characterization of lot use as heavy, medium or light.
 - Applying these standards to a model, the BARNY model currently in the rule may not measure up in comparison to newer tools. Tools such as BERT and APLE-Lots may better perform the desired functions identified above, and these models should be evaluated for use in ATCP 51. If BERT is incorporated into the rule, an applicant must use the model to document that an existing animal lot does not present a resource concern, making the necessary changes to resolve any identified resource concerns.
- The proposed ATCP 51 should incorporate the following updated technical standards for the applicable livestock structures:
 - 2016 NRCS 635 standard for new and substantially altered animal lots.
 - 2017 NRCS 629 and 2016 NRCS 635 standard for new and substantially altered feed storage structures.
- The “substantially altered” definition in ATCP 51 should be reviewed to determine if it properly captures the instances when altered feed storage structures must meet the latest NRCS technical standards.
- It is appropriate for the proposed ATCP 51 to create an exception to the design requirements for new and substantially altered feed storage structures under the following conditions:
 - This exception only applies to storage less than one acre in size.

- This exception only applies to runoff requirements where the risk of surface water and groundwater contamination is low.
 - The design requirements for the storage surface meets technical standards designed to prevent infiltration.
 - This exception only applies when first flush¹ is collected.
- The proposed ATCP 51 should require an engineering evaluation for an existing feed storage structure. The evaluation flowchart prepared by DATCP (see attached Appendix C) was reviewed and largely accepted with notes to better clarify the following:
 - Add an evaluation for the presence of leachate during the soils investigation in addition to identifying soil properties. For example, the NRCS 629 standard provides that an existing feed storage area will be expanded as a part of the project by performing at least two test pits or borings to evaluate for leachate under the existing feed storage area.
 - Provide for a more detailed analysis of the runoff from the site using criteria in NRCS or similar evaluation tools.
 - Provide for an analysis of the need to collect first flush based on the type of feed stored (e.g. high moisture). A system to collect first flush may not always be required if the evaluation determines no concerns from an existing storage area without such a system.
 - The proposed ATCP 51 should require repair or upgrade of bunkers or similar feed storage structures that fail the evaluation standards.
 - To address potential groundwater contamination as part of any upgrade or repair, a drain collection system should be installed for an existing facility if leachate is found under the surface of an existing feed storage area.

Monitoring Compliance

- The proposed ATCP 51 should require local governments to monitor permitted livestock facilities using an approved DATCP checklist.
 - The checklist should cover the key aspects of compliance with ATCP 51 standards.
 - The checklist should cover compliance with the NR 151 performance standards.
 - The checklist should be comprehensive and forward looking, covering whether the operation is anticipating adding animals or building livestock structures.
 - Local governments should have the option of monitoring by conducting site visits of permitted livestock facilities or requiring self-reporting by livestock operators.

Completeness Determinations and Permit Modifications

- The process for local governments to make a completeness determination of a livestock facility siting application, as modified in the proposed ATCP 51, is acceptable.

¹ First flush is defined in the 2016 NRCS 635 standard.

- Oversights or mistakes in the determination process can be corrected at the time of the hearing and final determination of compliance with standards.
- The process for permit modifications in the proposed ATCP 51 should be simplified and achieve the following:
 - As recommended by the 2014-2015 technical expert committee, enable permitted livestock facilities to secure streamlined approval of nutrient management plans if they add animals in the future.
 - Require political subdivisions to provide notice of an application for permit modification to adjacent property owners in accordance with ATCP 51.30(6).
 - Account for how local governments currently use permit modifications.
 - Allow permit modifications for increases in animal units beyond a certain number authorized in the last full approval issued by the local government.
 - The committee did not reach consensus on the allowable increase in animal units. However, most committee members agreed that the cumulative increase in animal units should not exceed 20 percent of the maximum number authorized in the most recent local approval and should be capped at 1,000 animal units.

Groundwater Protection

- To better protect groundwater, the proposed changes to ATCP 51.18(4) should require a more rigorous evaluation of existing waste storage structures by:
 - Expanding the conditions under which storage structures must be emptied and cleaned to some extent to complete an evaluation.
 - Requiring that the bottom of the storage structure be verified, for example, by requiring a comparison with as-built plans.
 - Requiring that a livestock operator's engineer prepare documentation to support the conclusions about the condition of an existing storage structure, and make available the documentation to the permitting authority.
 - Providing for a third party such as DATCP to independently review the evaluation of any existing storage structure located in environmentally sensitive areas.²
 - Requiring that existing waste storage structures be re-evaluated 10 years after the evaluation conducted as part of the latest application for a siting permit.
- Monitoring is an important tool to protect groundwater from failing or leaking waste storage structures. As such, monitoring is important in areas where risks are higher (e.g. based on depth of bedrock or proximity to fractured dolomite). More effective monitoring systems include structures with a secondary liner and leak detection system, or the installation of tile drains around the perimeter of the storage, which performs the dual functions of lowering any perched water table (so it does not interfere with the structural integrity of the structure) and intercepting any seepage.

² An example definition is Wisconsin Sensitive Environmental Settings in the 2017 NRCS 313 standard.

- Waste storage structures of a certain type, age and condition should be upgraded or be subject to groundwater monitoring (monitoring wells) at environmentally sensitive sites susceptible to groundwater contamination. If monitoring identifies problems, the groundwater quality standards in NR 140 should apply.
 - In revising ATCP 51, DATCP should recognize the challenges and opportunities in implementing a monitoring system (e.g. resources vary widely among permitting authorities).
- The committee took up the question of whether it is appropriate in ATCP 51 to restrict or prohibit the land spreading of manure in certain high risk settings or conditions. During the discussion on this issue, the committee focused on whether a permitted livestock facility, located in any part of the state, should spread manure on cropland with 0-2 feet of soil to bedrock, as is prohibited by the state’s targeted performance standards for areas with Silurian bedrock. While a majority of the committee members supported incorporating a prohibition on the land spreading of manure on cropland with 0-2 feet of soil to bedrock, a minority opposed the prohibition for the following reasons:
 - The 2014-2015 committee’s recommendation to incorporate the 2015 NRCS 590 standard into ATCP 51 includes restrictions on manure (and commercial fertilizer) applications on cropland with shallow soils overlaying bedrock.
 - Livestock facilities in the range of 500-1000 animal units in some areas of the state, apart from those with Silurian bedrock, may be heavily impacted by restricting manure applications on cropland in areas of 0-2 feet to bedrock. As an alternative, the committee posed applying this restriction to facilities with 750 or more animal units to alleviate concerns about impacting smaller farms, but the committee did not resolve the issue.
- The committee took up the question of the appropriate separation distance to adequately protect a private well from manure that is stored in a structure located on Silurian bedrock or similar fractured bedrock formations. The committee was asked to select a minimum separation distance from a range of 250 to 1,000 feet. The committee’s recommendation was evenly split – five recommended 250 feet and five recommended 1,000 feet – with the following justifications in support of their selections:
 - The 250-foot separation distance from a manure storage structure to a private well is consistent with the minimum requirement in several state administrative codes (e.g. NR 812, 151, and 243) and the 2017 NRCS 313 standard. However, a change in the minimum separation distances may be warranted based on further analysis and research involving agriculture related risk factors for private well contamination in Northeast Wisconsin.
 - Current research and analysis warrants a 1,000-foot separation distance from a manure storage structure to a private well as a strategy for mitigating the risk of contamination in this sensitive environment in Northeast Wisconsin. Also, several state administrative codes require a minimum separation distance of 1,000 feet from manure storage structures to public water supply wells, and given that private wells are typically shallower and likely more susceptible to contamination in landscapes with fractured bedrock, it is reasonable to require an equivalent minimum separation distance.

Appendix A

Technical Expert Committee: Background and Process

As required by law, ATCP 51 was developed with advice from the Technical Expert Committee (TEC) convened in 2004. In subsequent years, DATCP has convened three committees in 2010, 2014, and 2018 to provide advice on updates to the siting rule.

Under sec. 93.90, Stats. (siting law), the DATCP Secretary is required to appoint a committee of experts to review the technical standards in ATCP 51. In carrying out this requirement, DATCP committed to a process with a focus on scientific and technical matters, using a committee composed of experts from the public and private sector who were selected based on their knowledge and experience with water quality, odor and other technical areas covered under ATCP 51.

Background

Before convening the 2014-2015 TEC, DATCP presented a four year evaluation report on implementation of the livestock facility siting rule in February 2014 to the Board of Agriculture, Trade and Consumer Protection (ATCP Board). The report addressed the appropriate areas for the agency's rule review and identified policy and other issues beyond the scope of the rule review. As follow-up, DATCP invited Farm/Livestock Groups, Government Agency Groups, and Environmental/Citizen Groups to participate in separate listening sessions. All participants were asked two questions:

1. What do you like/what is working in the siting rule?
2. What changes would you like to be made to the livestock siting rule?

Based on feedback from stakeholders, DATCP narrowed the issues appropriate for the committee, and developed the assignment questions for the committee to address. The 2014-2015 committee sent its final report to DATCP Secretary Brancel on September 22, 2015: <https://datcp.wi.gov/Documents/LivestockTechComReport2015.pdf>.

In August 2016, the ATCP Board approved a scope statement for ATCP 51, which expires in February 2020. DATCP staff prepared revisions to ATCP 51, including many of the recommendations identified by 2014-2015 Technical Expert Committee. At the ATCP Board meeting in July of 2017, board members did not approve the draft rule and directed DATCP to obtain feedback from three stakeholder groups – agricultural groups, environmental organizations, and local governments. Following the completion of this task in the Fall of 2017, DATCP has not returned to the ATCP Board to present the feedback from the three stakeholder groups and seek approval for taking a draft rule out for public hearing.

Committee appointments

DATCP Secretary Sheila Harsdorf appointed the same members to this committee who served during the 2014-2015 review. All eight members returned to serve again on this committee, and some of the eight agency advisors were new to the review process (see the last page for list). Drawn from both the public and private sectors, DATCP selected the participants for their

expertise necessary to provide advice regarding permitting of livestock operations, air emissions, odor, livestock regulation, nutrient management, public health, runoff management, and agricultural engineering.

Review scope and criteria

The committee was charged with recommending options for adjusting the existing siting technical standards and related rule provisions to ensure the standards keep pace with changing agricultural practices and remain environmentally protective. The standards in the siting rule must be practical for producers to achieve and for local governments to implement, while continuing to meet the objectives of the siting law. This committee's approach to reviewing the technical standards in ATCP 51 was to determine whether the recommendations made during the 2014-2015 review needed to be updated based on the department's draft siting rule from 2017 and other developments in the last four years.

The questions posed to the committee reflected the purposes of reviewing the siting rule:

- Maintain a viable rule by responding to new information.
- Balance responsible industry growth with community interests.
- Ensure the siting standards keep pace with and reflect changes in the size, technology, and complexity of livestock operations.
- Update the siting standards to incorporate important changes in technical standards.
- Respond to local experiences with permitted and non-permitted farms.
- Improve implementation of the siting rule through refinements to procedures.

The scope of the committee's review was limited to technical issues related primarily to water quality and odors. Discussion of the issues focused on the impacts of facility size, Natural Resources Conservation Service (NRCS) updates to technical standards, developments in research and new technologies, and implementation experiences including monitoring for compliance. The committee followed an objective and science-based approach consistent with their background and expertise.

The committee's considerations were informed to a degree by conditions and issues related to farms that have been granted local siting permits over the last thirteen years. However, the committee was limited in its capacity to evaluate this type of information for the following reasons: 1) there is a lack of verifiable data pertaining to conditions on permitted farms, and 2) there is a lack of data reported to DATCP concerning the performance of permitted farms making it difficult to interpret how the standards are working on the ground. Where there was uncertainty in this regard, the committee considered options to retain the status quo or to make adjustments to standards justified by the available, supporting information.

Also, the siting law required that the committee consider whether proposed changes are:

- Protective of public health or safety
- Practical and workable
- Cost-effective
- Designed to promote the growth and viability of animal agriculture in this state

- Designed to balance the economic viability of farm operations with protecting natural resources and other community interests
- Usable by officials of political subdivisions

Meeting framework and deliberative process

Committee meetings took place on December 21, 2018, and January 29, February 15, and March 22, 2019. During these meetings, the committee answered all assignment questions, and then reviewed and vetted all recommendations for inclusion in this report.

To ensure a transparent and public process related to the committee's deliberations, DATCP committed to the following:

- Publicly notice and conduct each meeting according to the open meetings law.
- Prepare staff notes for each meeting.
- Maintain a website to share critical documents and information, such as the committee assignment, meeting agendas, and staff notes for each committee meeting: https://datcp.wi.gov/Pages/Programs_Services/LSTechExpertCom.aspx

The committee followed ground rules intended to create an environment conducive to the free exchange of information and thoughtful deliberation on technical issues. Though the public did attend committee meetings, in accordance with state law, there were no presentations by the public. This structure recognized that there will be an occasion for the public to comment and share their ideas, during rulemaking related to the committee's recommendations.

The committee utilized a consensus process to develop their recommendations. Although the turnaround time made it challenging to fully address all issues and resolve differences of opinion among committee members, the process allowed the committee to complete its work in achieving final, consensus recommendations.

Appendix B

Livestock Siting Technical Expert Committee 2018-2019

Committee Chair

Chris Clayton – DATCP

Technical Committee Members

Matt Ruark – Department of Soil Science, UW-Madison

Jerry Halverson – Manitowoc County Soil and Water Conservation Department

Charles McGinley, P.E. – St. Croix Sensory, Inc.

Tonya Gratz – Green County Land and Water Conservation Department

Kevin Beckard – AgSource Laboratories

Bob Pofahl, P.E. – Resource Engineering Associates, Inc.

Brian Holmes – (retired) Department of Biological Systems Engineering, UW-Madison

Mark Borchardt – USDA-Agricultural Research Service

Technical Committee Advisors

Scott Mueller – Natural Resource Conservation Service, USDA

Robert Thiboldeaux – WI Bureau of Environmental and Occupational Health,
Department of Health Services

Mary Ann Lowndes – WI Department of Natural Resources

David Panofsky – WI Department of Natural Resources

Gretchen Wheat – WI Department of Natural Resources

Pat Schultz – WI Department of Agriculture, Trade and Consumer Protection

Richard Castelnuovo – WI Department of Agriculture, Trade and Consumer Protection

Chris Clayton – WI Department of Agriculture, Trade and Consumer Protection

Appendix C: Evaluation Flowchart

DRAFT 12/21/16

Is The Existing Feed Storage Facility Adequate?

