

NRCS 635 Vegetated Treatment Area Standard Team

MEETING NOTES

Thursday, April 6, 2023 ▲ 9:00am – 2:30pm ▲

NRCS, 8030 Excelsior Drive, 2nd Floor Conference Room, Madison, WI

SCHEDULE IN BRIEF

9:00 Welcome & Introductions (Kate, Team)
9:30 SOC Process, Team Responsibilities (Kate)
10:00 Current Resources, Goals & Sideboards (Steve)
10:30 *Break*
10:45 Group Agreements and Decision-Making (Kate)
11:00 Team Timeline and Meetings (Kate)
11:15 Key Issues for the Standard (Kate, Team)
12:00 *Lunch, provided*
12:30 Prioritize Key Issues (Steve, Team)
1:30 *Break*
1:45 Identify Research & Presentation Needs (Kate, Team)
2:15 Plan of Action (Kate, Steve)
2:30 *End*

9:00 Welcome & Introductions (Kate, Team)

Goal: Familiarize team with other members and their experience related to these standards.

Thank you for taking time to join us today, and committing to this project to create this new technical standard.

Attendance: **Steve** Becker, Sponsor and Team Leader – NRCS
Chase Brouillette – Ozaukee Co. LWMD
Travis Buckley – DATCP
Mike Gilbertson – WDNR
Emily Micolichuk – Miller Engineers & Scientists
Adam Moris – NRCS
Justin White – DATCP
Eric Young – USDA-ARS

Absent: **Bernard** Michaud – WDNR

Guests: None

- Kate hands out a team contact list so everyone has names, employer affiliation and contact information for fellow teammates.
- This whole process is a team conversation. Kate may call on different people, but if anyone has something you'd like to discuss, please speak up! This won't be as critical today but in

future meetings we'll have more collaboration, and you always have permission to get into any conversation if your ideas, questions, and views have not yet been expressed.

- Overall Meeting Goal: Build our understanding of each other's experience and team expectations, identify the issues to be addressed, start talking about how the team can work through issues.
- These are public meetings that are posted on the SOC website. We may have guests, though only team members are allowed to participate unless guests are invited.

SOC Process, Team Responsibilities (Kate)

Goal: Establish understanding of SOC process & member expectations.

Kate presents on SOC origin, process for standard creation, and what to expect.

The SOC Handbook has details on responsibilities of all participants, including Team Members. The link to the handbook was included in the application materials and in the Welcome to the Team email: https://socwisconsin.org/wp-content/uploads/2022/12/TSPH_8thEd_Final-Dec2022.pdf

Kate Brunner is the SOC Program Manager. Her role and responsibilities include:

- Coordinate and facilitate standard teams – meeting logistics, agenda, facilitation, recording & distributing meeting notes, maintaining communication via listserv & website, food, drink
- Monitor team progress, follow up on action items, ensure multiple perspectives are represented
- Facilitate the initial & broad review periods, including distributing comments to team
- Assist Team Leader with tracked changes documents as needed
- Draft Meeting Notes for Team Leader review
- Distribute final standard to tech standard users
- Lead team evaluation process and implement changes as needed
- Finally, outreach and training upon final publication

Steve Becker is the NRCS Custodian and his role is to:

- Authorize staff time to commit to standard projects
- Provide resources as needed for standard completion
- Assist with identifying broad goals and sideboards
- Assist in clarification of goals, provide background materials

Steve Becker is also the Team Leader which acts like the chairperson during team meetings. He will:

- Oversee training & education associated w/ proper implementation of the standards
- Assist SOC Program Manager with team discussions, meeting mgmt., agenda development
- Call out when group is on a tangent or when topic needs focus [Kate will keep a parking lot to track things to be discussed at another time]
- Help identify and assign tasks to appropriate team members
- Serve as main editor of draft standards and revisions
- Review & edit Meeting Notes prior to sharing with full team
- Communicate team progress and getting input from others at DNR

Team Members

- Collaboration is key!
 - Follow Group Agreements
 - Abide by the consensus decision-making process
 - Attend meetings on time and participate
- Complete assignments on time
- Work toward a team goal, not a personal or political objective
- Accept and defend team decisions
- Do not share information about individuals' positions
- Do not share info with someone who intends to undermine the process
- Those with complaints to submit research, read meeting notes, or attend a meeting (alert Kate 1 week in advance).

Current Resources, Goals & Sideboards (Steve)

Goal: Define team mission & set sideboards. Provide an overview of the standard, including NRCS requirements, and NRCS goals for the revised standard.

Steve hands out the existing WI standard (2016) and new national standard (2022). We can't change national language and the new NRCS document management system has limitations on the types of edits that can be made.

He reviews NRCS's goals and how they see the revisions being implemented. There were 3 options to consider when new national standard was published:

1. No Action – This was considered since NRCS hasn't contracted a VTA for 5 years.
2. Archive and Drop VTA Standard – There is still value in maintaining the standard.
3. Revise VTA Supplemental Criteria – YES! This is why the team is here. Goal is to develop a more usable standard.
 - a. DATCP has installed VTAs. The previous standard was restrictive that some projects where VTAs were taken off the table.
 - b. It could be a good tool to provide a way to minimize waste storage and transfer. This is expensive and accident prone.
 - c. DNR also doesn't see much cost sharing for VTAs but sees value in helping get more installed. Waste storage is costly (and getting more expensive) and DNR programs would benefit from VTAs which would be less expensive.
 - d. DNR doesn't have a place for VTAs at CAFO.

Some key points:

- NRCS's national standards are tending to be more general. This gives states leeway for details.
- Edits from 2016 could be lifted into the 2022 standard for our edits. Around 2016 EPA was evaluating discharge from VTAs in WI.
- NRCS handles the waste management details; surface water and groundwater protection is under DNR jurisdiction. DNR rules and guidance (like for direct runoff and significant discharge) that will also be referenced in this process.
- NRCS had 8,600 WI dairies in 2016 to 6,400 now. This is in part due to consolidation and CAFOs can't use VTAs.

Group Agreements and Decision-Making (Kate)

Goal: Develop a common understanding of how we'll operate as a group and further define member expectations.

Kate identified some agreements for the team meetings rules to ensure a comfortable and open environment and the team discusses. More agreements may be added later.

- Attend meetings on time
- Complete assignments on time
- Stay respectful of the conversation

Decision making:

- Disagreements are valuable but try to maintain a respectful discussion ("constructive conflicts").
- We will strive for full consensus, though sometimes we may need to move forward with only substantial agreement. Imagine there may be a situation where there may be 1 or 2 disagreeing outliers or evenly represented opposing positions.
 - Kate will ask the team to work together and find an agreeable solution—not necessarily just saying "No" to an idea but talking through what part might be changed to make the text more agreeable.
 - We may vote on issues to see where the team members land on a topic. We will use a consensus model and team will work together for a collaborative work product.
 - In some situations, Steve or others at NRCS may make the call.

Absences:

- Attendance:
 - Make all attempts to attend meetings. Email Kate and Steve directly if you can't attend a meeting.
 - If you can't attend the in person meeting, remote or partial participation is preferred.
 - If you can't attend a meeting at all, review the notes to stay informed. You can also talk to Steve to catch up on details.
- Substitutes for team members are generally discouraged by the SOC handbook. The team agrees that substitutes will not participate or count toward consensus/vote. These are public meetings and you may send a colleague to listen in and take notes for you.
- Throughout this process we'll try to avoid discussing topics multiple times unless there is new information.

Quorum: We have 9 team members, which includes the team leader. Team agrees:

- If 6 or more team members attend a scheduled meeting, proceed with agenda and make decisions.
- If 5 or less attend, the meeting may still be held but would be more like a sub-group meeting where no decisions are made and the notes submitted to the rest of the team for input on topics discussed.

- Steve must be present for team meeting to occur.
- Subgroup meetings without Steve and without a quorum may be used—either in between scheduled meetings or in place of a team meeting if Steve is absent for some reason.

Team Timeline and Meetings (Kate)

Goal: Review timeline for drafting, reviewing, and completing the standard.

We have a planned timeline with a combination of in person and virtual meetings. We'll need some flexibility—the team may have sticking points to work through, of the review periods may raise substantial comments, for example. If there are changes to the schedule, Kate or Steve will keep the team informed.

Date	General Focus	Meeting Format
April 6, 2023	Kickoff & goal setting	In Person Meeting
May 3, 2023	Problem definition (w/presentations?)	Virtual Meeting
June 7, 2023	Discussion of key topics	Virtual Meeting
July 5, 2023	Brainstorming/outline new criteria	In Person Meeting?
August 2, 2023	Refine criteria and considerations	Virtual Meeting
September 6, 2023	Discuss new sections	Virtual Meeting
October 4, 2023	Team review/discussion, select initial reviewers	Virtual Meeting
November 1, 2023	Team finalizes draft text	Virtual Meeting
November 2023	Initial review (2-3 weeks + intake)	N/A-process step
December 6, 2023	Address initial review comments	Virtual Meeting
January 3, 2024	Finalize draft for public comment (3 weeks + intake)	Virtual Meeting
Jan. 2024	Broad Review period (3 weeks +intake)	N/A-process step
February 7, 2024	Respond to public comments	Virtual Meeting
March 2024	Publish final technical standard	N/A-process step

Key Issues for the Standard (Kate, Team)

Goal: Review and discuss issues with the current technical standard.

Kate emailed a list of issues compiled from the team applications. Steve saw the benefit of getting some public input before this team got started so a few weeks ago we released a short survey to those with experience in agricultural waste storage/handling and vegetated treatment areas. We had 49 responses—mostly county staff and NRCS but also a few DNR and DATCP staff.

Kate will email the team the survey results. General themes were clear from the survey:

- Farmstead land is valuable and setbacks and VTA size take up space
- Not working -could be maintenance, sizing

- Regulatory uncertainty – what if it doesn't work or EPA changes
- Uniformity in flow across the VTA
- Seasonality – what to do in winter

Steve shared an approach to tackling the issues with 3 categories: Risk Assessment, Hydraulic Assessment, and Agronomic Assessment.

1. Risk Assessment

Level I	Level II	Level III (>1,000 AU)
Sediment Basin	Sediment Basin	Full Storage Q ₂₅ and winter runoff
Q ₂ Complete Infiltration No Deep Percolation	Q ₂₅ Complete Infiltration No Deep Percolation	Complete Infiltration No Deep Percolation
Passive Irrigation Flood	Passive Irrigation Flood	Managed Irrigation Flood or Sprinkler
Some Q ₂₅ Runoff Some Winter Runoff	No Winter Runoff Endblock Tailwater Catchment	No Winter Runoff
Nutrient Balance Q ₂	Nutrient Balance Q ₂ and @ ₂₅	Nutrient Balance – per application

Hydraulic model may work out some other details. Current standard includes a lot more requirements and Team can choose to remove some requirements or move Criteria (requirement) to Considerations (recommendations). The above Levels could also include additional categories like:

- Animal Units, animal density, or sizing, or tonnage stored – team doesn't like standard using animal units.
- Setbacks – current standard has a lot of setbacks and they are complicated to interpret together and restrict possible VTA setting
- Point source vs nonpoint source
- VTA=100-150% feed lot – this flat rate has been around a while and might not be substantiated. Team doesn't see need for this as hydrology drives design.
- Endblock/endberm – standard could require this, but may also/instead need language for what to do if ponding.
- Could a managed wetland be constructed at the end?
- Deep percolation control can be tricky on sandy soil – the VTA design could address by narrowing, capping, baffling, and other design modifications. If the modeling doesn't work out for certain limitations, this might not work for all sites.

2. Hydraulic Assessment

- Irrigation Model – Standard will not likely require running model but as the teamwork moves along, Adam will run modeling options for projects in the standard to test out the revised criteria.
 - SRF model (or another option from Florida) - Adam is looking into them
 - Volume of VTA runoff
 - Volume of deep perc
- Water Distribution
 - Uniformity

- c. VTA Geometry
 - i. Length, width, depth, slope
- d. Assumptions
 - i. Antecedent moisture conditions (changes due to rain and water table)
 - ii. Construction tolerances – specificity of requirements to take into account constructability with size of project area (e.g. VTA isn't perfectly level and sloping not perfect)
- e. Planning and Presentation or Results

3. Agronomic Assessment– good nutrient balance

- a. Source - VTA can be used for feed storage, milkhouse, or animal lot and the functions and nutrients are totally different. The current standard is long because of these differences.
 - i. Feedlot runoff
 - ii. FSA leachate and runoff
 - iii. Milking center washwater
- b. Nutrient Concentration Models
 - i. APLE-Lots – newer model, good for phosphorus
 - ii. BERT
 - iii. BARNY

Summary

BARNY vs. BERT vs. APLE-Lots

BARNY

- ☐ Estimates average annual P loss (lbs.)
 - ☐ At edge-of-lot AND
 - ☐ End of vegetated area
- ☐ Credit for settling basin
- ☐ Annual rainfall from 1990 Green Bay data, and adjusted for other areas
- ☐ Data (input/output):
 - ☐ Uses constant conc. of P (85 mg/L)
 - ☐ Some outputs credible, some questionable
- ☐ Too Simple?

BERT

- ☐ Resource concern rating tool (NO P loss)
 - ☐ At edge-of-lot AND
 - ☐ End of vegetated area
- ☐ Credit for settling basin
- ☐ Single rainfall event
- ☐ Data (input/output):
 - ☐ Very similar to BARNY
 - ☐ Allows for additional considerations
 - ☐ Pollution potential
- ☐ No lbs. of P loss

APPLE-Lots

- ☐ Estimates average annual P loss (lbs.)
 - ☐ At edge-of-lot
 - ☐ NO vegetated area option
- ☐ NO settling basin option
- ☐ Annual precipitation AND considers single event
- ☐ Data (input/output):
 - ☐ More complex inputs
 - ☐ More complex calculations
 - ☐ More accurate results
- ☐ Edge-of-Lot ONLY



- c. Waste Volume and Distribution
 - i. From hydraulic assessment
- d. Assumptions
 - i. Vegetative growth
 - ii. Harvest and maintenance
 - 1. If standard could allow harvestable VTAs like as feed, then this would help encourage usage. Level spreaders makes harvesting

- difficult so team could look at other options that work with harvesting plan. Grazing is not allowed in national standard.
2. Mowing and other maintenance are not often performed.

The team reviews the survey responses together and starts to identify which of 3 categories the issues fall into; however there is a lot of overlap. Steve will review this concept and perhaps divide team into subgroups to work on parts of these categories and work out what current criteria are substantiated and what's not. Some initial research will be assigned to each team member later in the meeting.

Lunch, provided**Prioritize Key Issues (Steve, Team)**

Goal: Prioritize the order in which issues will be discussed and identify steps to address them.

Steve has identified some areas to look into to prepare groundwork for the next meeting. The team will help by working on these next steps:

Adam will be testing the model with some different scenarios like:

1. Feed storage areas – 1ac, 3ac, 5ac variations
2. Feedlots – a few different sizes with AUs vs other sizing metric
3. Milkhouse waste

Bernie and Mike – Identify sources where current standard contains numeric requirements, and which are DNR rule/reg sideboards for the following:

- Setbacks – Where did the current list of setbacks come from? Should we keep these setbacks as is? Or propose new definitions of what the setbacks should be. **Kate** can review previous team documents to look up history of vertical and horizontal setbacks and will send to Bernie and Mike as starting point. Could have been from 151, 253 and/or CPS 590, or from team discussions?
- AUs – Where did 500AUs come from? and whether it needs to stay (ATCP51 siting rule?).
- Drainage area – where did 5 acres come from for “channelized flow (i.e., a drainage area of ≥ 5 acres)”

Review of agronomic tools would be helpful to understand variations in concentrations. **Eric** will review BERT, BARNY and APLE-Lots to assign concentration to the volume, vegetation (incl. rooting depth). Montana NRCS VTA standard design chart may also be helpful resource.

Travis and **Emily** and **Justin** will identify the different volumes for Adam to model based on their experiences. Could look at CPS 629 milkhouse waste as one resource.

Chase will look at current 2016 standard and highlight objectively to identify what is difficult to understand and overcomplicated.

The team will look at the information gathered at the next team meeting in May to better understand the context for the existing standard and some design basics. We'll review where the metrics from the previous standard came from (and which may be flexible) and review model comparisons for different options.

Identify Research & Presentation Needs (Kate, Team)

Goal: Identify issues that need research, or presentation of research, and identify potential presenters.

For the May meeting we have enough on the agenda for next steps with presentations by the team (Adam, and Bernie/Mike). Team will keep in mind if there is a need for outside presenters at a later point.

Plan of Action (Kate, Steve)

Goal: Identify topics, concerns, and goals for next meeting. Review Action Items and agenda items for next meeting.

Next meeting date is May 3 and will be virtual. Zoom link will be on the agenda and is also in the calendar invite. Agenda will include presentations by Adam and Bernie (supported by Mike).

After next meeting, we'll look at some more technical details like uniform flow and options for leveling systems. These will then be reviewed at the June meeting.

Action Items developed today:

1. **Kate** will email the team the survey results on challenges with current VTA standard.
2. **Adam** will be testing the hydraulic model. Prepare to present at May meeting.
3. **Kate** – research sources for the setbacks from the current 2016 standard and AUs. Send to Mike and Bernie.
4. **Bernie and Mike** – Review setbacks with sources and identify if we need to keep these as is? If not, recommend to keep as-is or propose new definitions of what the setbacks should be. Could look at adjacent states' CPS. Prepare to present at May meeting (Mike will coordinate with Bernie).
5. **Mike and Bernie** – Identify source(s) for AUs (esp. 500AUs).
6. **Eric** – review BERT, BARNY and APLE-Lots to assign concentration to the volume. Could also look at Montana VTA standard for design chart. Also, look at what vegetation used and nutrient uptake for those species. Send to Adam.
7. **Travis and Emily and Justin** will identify feedlot volumes for Adam to model (incl. scraped and unscraped). Could look at CPS 629 milkhouse waste as one resource.
8. **Chase** will look at current 2016 standard and identify areas that are difficult to understand and/or overcomplicated.
9. **Full team**: if you haven't already, review the current WI standard and new national standard.
10. **Kate**: prepare draft meeting notes, then reviewed by full **Team**.
11. **Kate and Steve**: prepare agenda for May 3. Kate will send to the full team 1 week in advance.

2:30 End