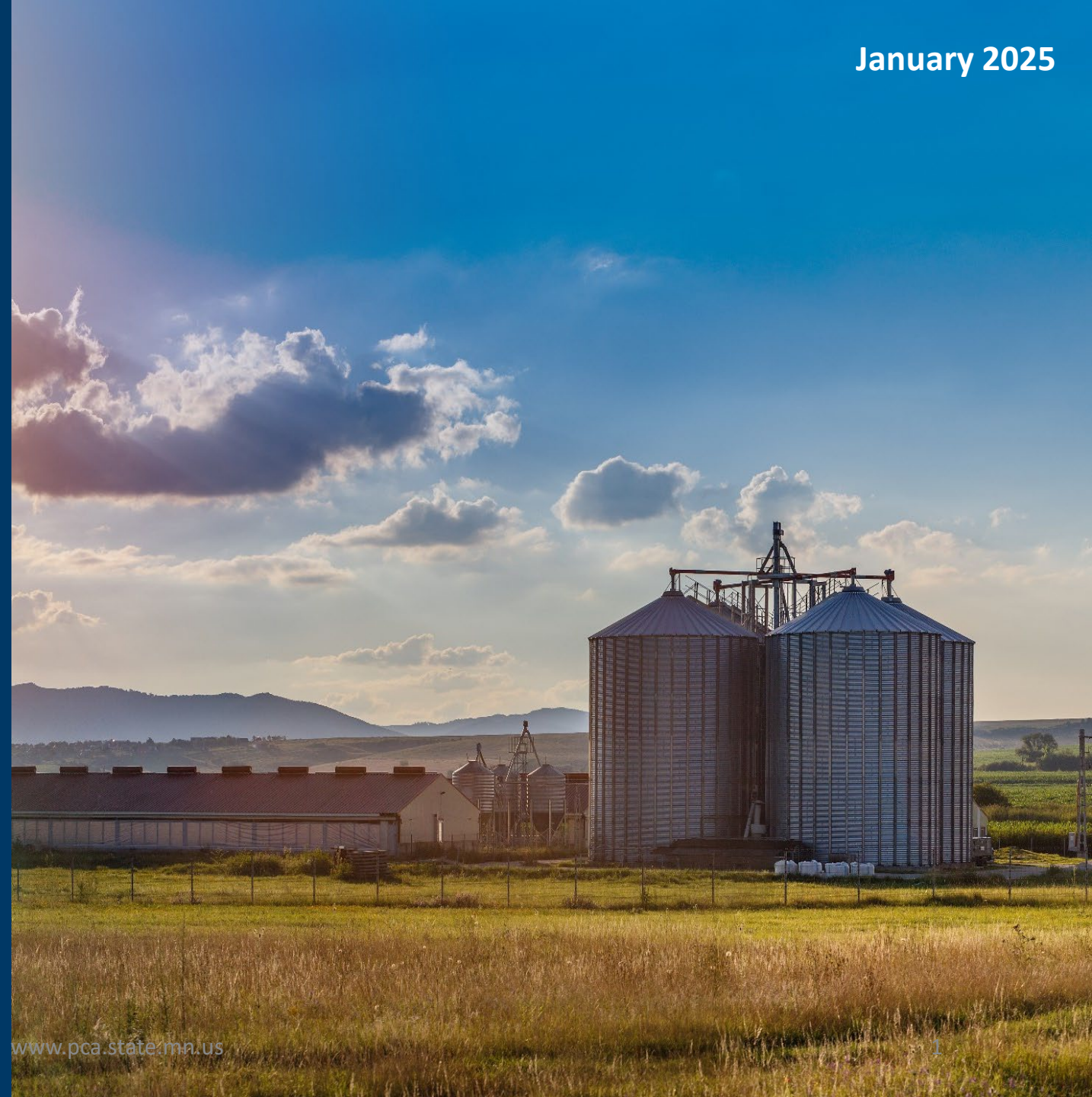


New Feedlot General NPDES and SDS Permits



Welcome



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- **Changes to final permits in response to comments**
 - Nitrogen BMPs in vulnerable groundwater areas
 - Visual inspections of land application sites
- **Other notable requirements in final permits**
 - Manure transfer
 - Winter application
 - Sampling of discharges
- **Implementation of permit requirements**
 - Applications for coverage

Approximately 1,000 facilities are permitted

Feedlot general permits impact about 1,000 facilities in Minnesota

- NPDES – National Pollutant Discharge Elimination System (federal permit)
 - Current general permit for roughly 800 sites expires Jan. 31, 2026
- SDS – State Disposal System (state permit)
 - Current general permit for roughly 250 sites expires May 31, 2025
- Draft NPDES and SDS permits nearly identical
 - Concurrent public notice June 24 to Sept. 3, 2025
 - 183 timely comment letters

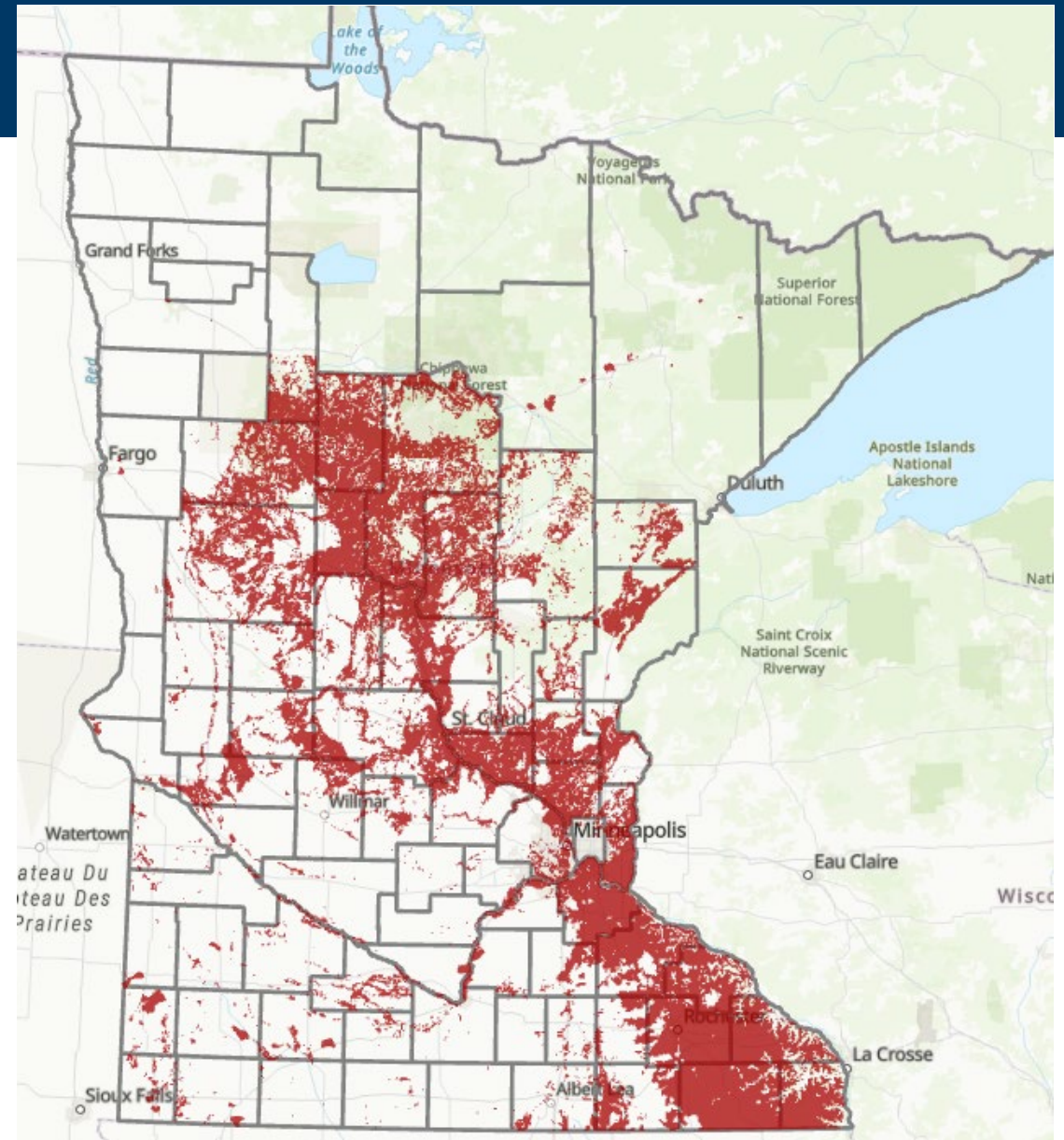
Significant permit changes in response to comments

Protecting groundwater in vulnerable areas

A vulnerable groundwater area is where nitrate can move easily through soil and into groundwater, contaminating drinking water sources.

Vulnerable groundwater area map

- MDA fall fertilizer restriction map
- Drinking Water Supply Management Areas with high vulnerability (MDH)



Nitrogen (N) BMPs in draft permits

June through Sept.

- Cover crops or application to an actively growing crop

Vulnerable areas Oct. & Nov. (Starting 2028)

- 2 options
 - Follow June – Sept. requirements
 - Soils 50° or less and perennials in the rotation

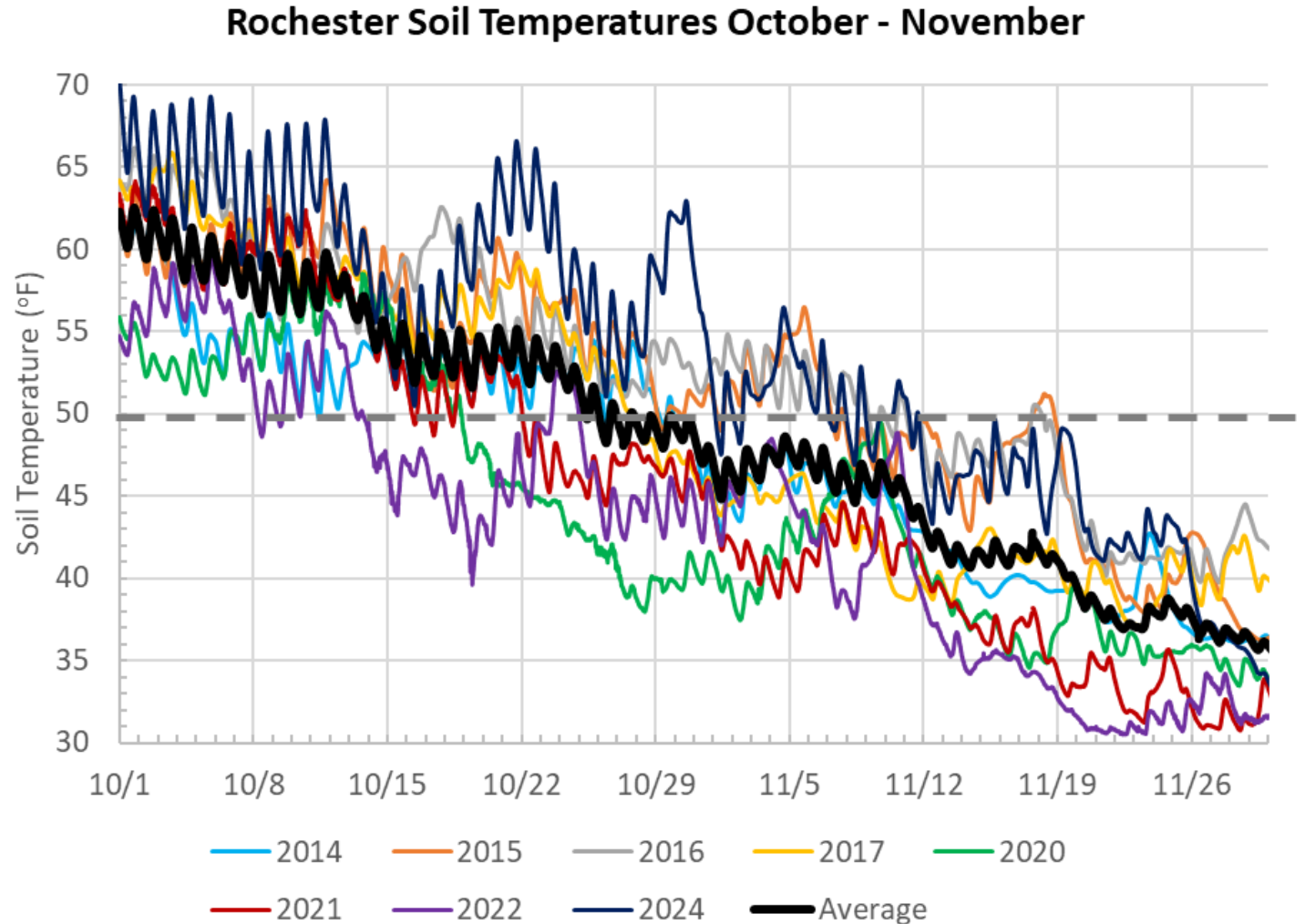
Non-vulnerable areas Oct. 1 - 14

- 4 options
 - Follow June – Sept. requirements
 - Soils 50° or less
 - N stabilization product
 - Split application (max ½ N needs)

Changes to vulnerable groundwater area N BMPs

Oct. & Nov. split into 3 timeframes

- Oct. 1 – 14
 - Warm soils
- Oct. 15 – 31
 - Transition to cool soils
- Nov. 1 – 30
 - Cool soils



June through Sept.

- Cover crops or application to an actively growing crop

Vulnerable areas Oct. 1–14

- Follow June – Sept. requirements
- *Removed:*
 - *Option for soils 50° or less and perennials in the rotation*
 - *Delay until 2028*

Non-Vulnerable areas Oct. 1–14

- 4 options
 - Follow June – Sept requirements
 - Nitrapyrin-based N stabilization product
 - Soils 50° or less for 2 consecutive days
 - Split application (max ½ N needs)

2 consecutive days example:

- Soil temp reaches 50° anytime during Oct. 3 & 4
- Requirement met for any day after Oct. 4, regardless of soil temp at application

June through Sept.

- Cover crops or application to an actively growing crop

Non-vulnerable areas

BMPs encouraged
but not required

Vulnerable areas Oct. 15 – 31 (Starting 2027 ~~2028~~)

- 3 options (previously only 2 options)
 - Follow June – Sept. requirements
 - Soils have reached 50° or less for 2 consecutive days and perennials in the rotation
 - Soils have reached 50° or less 2 consecutive days and:
 - Liquid manure – nitrapyrin-based N stabilization product
 - Solid manure – split application (max ½ N needs)

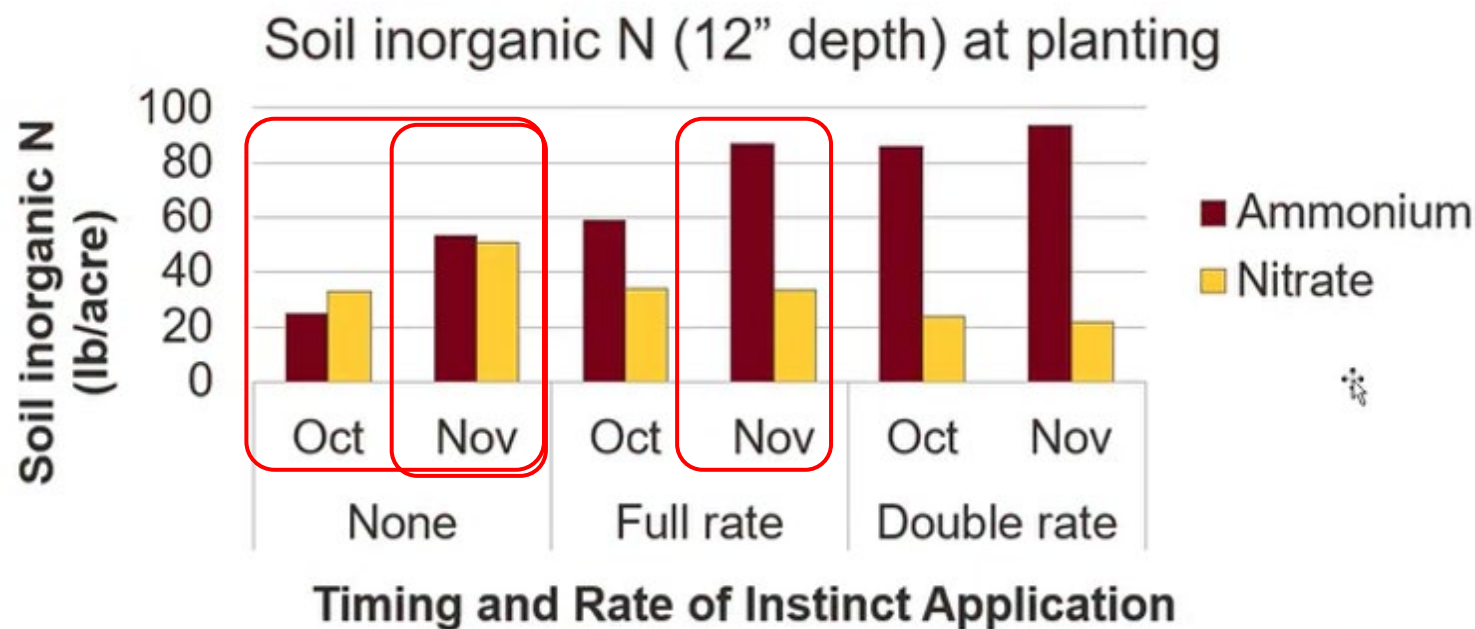
Combining N BMPs

Application timing and N stabilizer

U of M study (Vetsch) 2012 - 2014

- Later application is better
 - More N at planting
- Later application with stabilizer is better still
 - Lower conversion of ammonium to nitrate
 - Nitrate is the form that is mobile with water

Impact on soil inorganic nitrogen



Source: Slide - Melissa Wilson, University of Minnesota – Data: Vetsch et al 2017

June through Sept.

- Cover crops or application to an actively growing crop

Vulnerable areas Nov. 1 – 30 (Starting 2027 ~~2028~~)

- Liquid manure only
- 3 options (previously only 2 options)
 - Follow June – Sept. requirements
 - Perennials in the rotation (*removed 50° soil temp requirement from this option*)
 - Nitrapyrin-based N stabilization product

Non-vulnerable areas

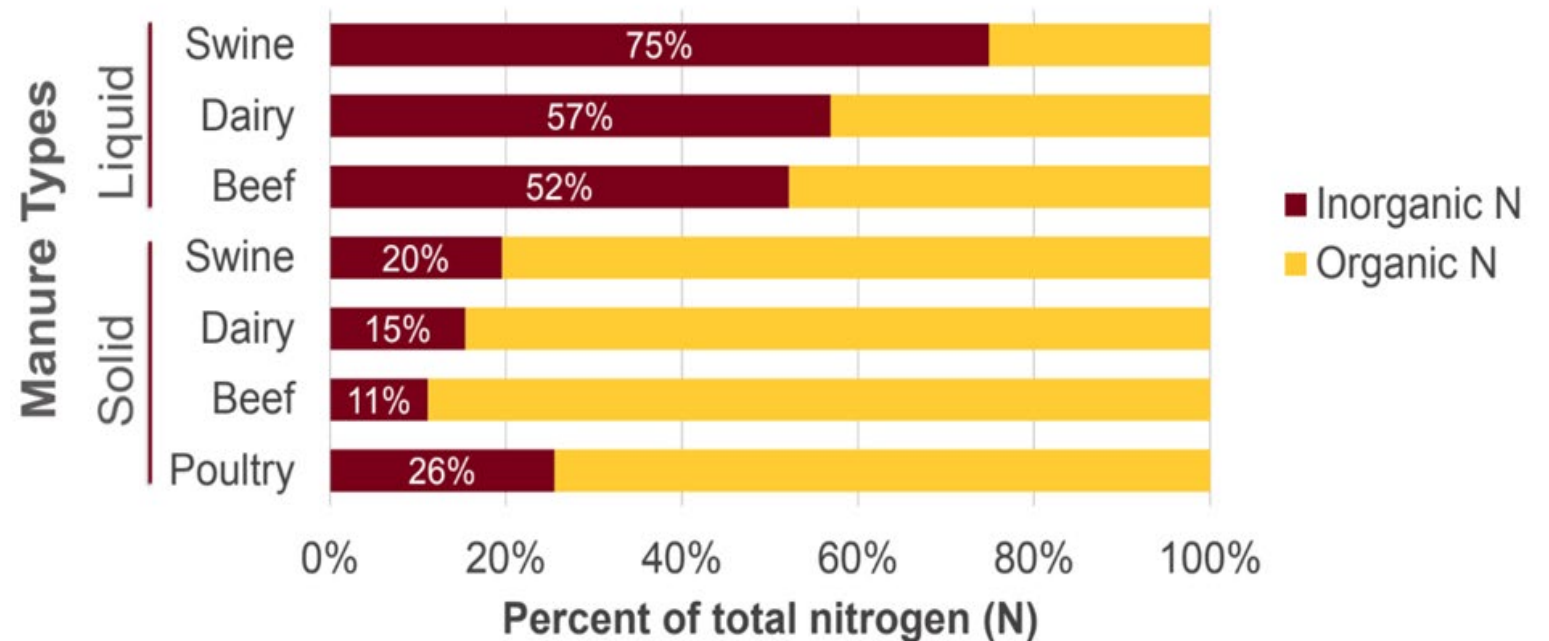
BMPs encouraged
but not required

Nitrogen in manure

Why only liquid manure?

- Liquid manure has higher percentage of inorganic N
 - More potential N conversion to nitrate
- Organic N conversion to nitrate takes time
 - Less risk of nitrate formation and loss

Manure nitrogen distribution

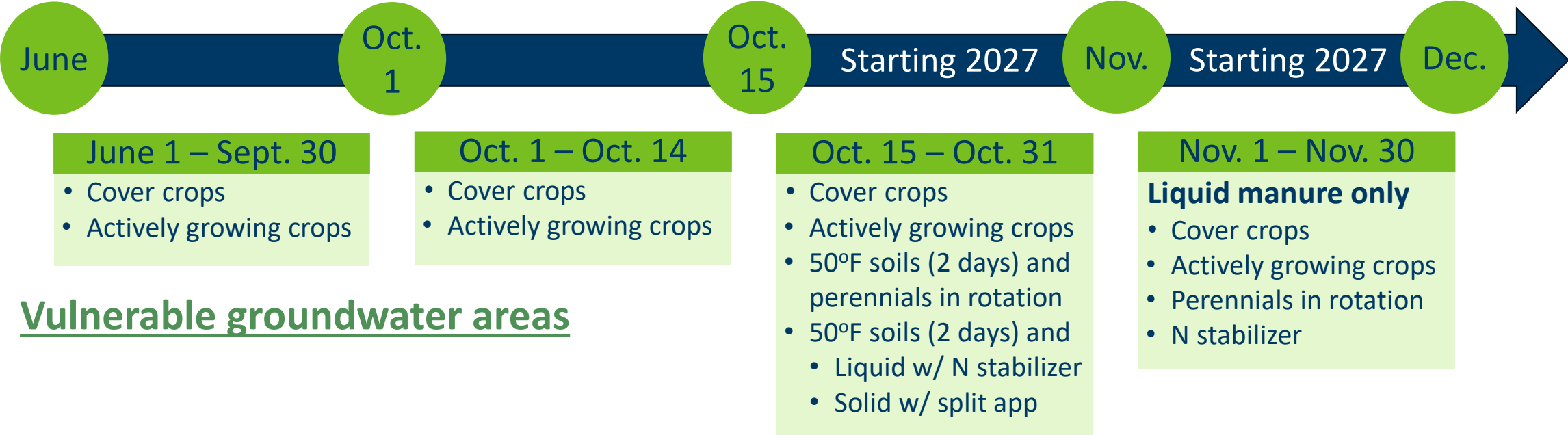
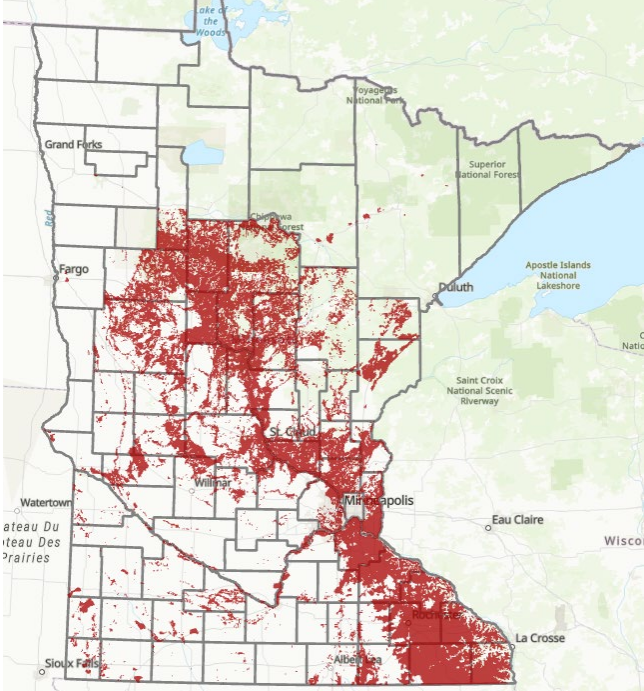


Source: Melissa Wilson – University of Minnesota

Final N BMP requirements (summary)

Non-vulnerable groundwater areas

| June 1 – Sept. 30 | Oct. 1 – Oct. 14 |
|--|---|
| <ul style="list-style-type: none">• Cover crops• Actively growing crops | <ul style="list-style-type: none">• Cover crops• Actively growing crops• 50°F soils (2 days)• N stabilizer• Split application |



Vulnerable groundwater areas

Application site inspections

(vulnerable and non-vulnerable areas)

Visual inspections of land application fields for signs of discharge

Where:

- Down-gradient field edges, tile intakes, and sensitive features

When:

- At least once each day manure is applied
 - *Replaced: At least one time during application*
- At the end of application to the field
 - *Replaced: At the end of each workday*
- Within 24 hours of a ½ inch or greater rainfall that occurs within 14 days of application
 - Unless manure is worked into the soil



Other notable requirements

Manure application in winter conditions

New for SDS permit – Existing in NPDES permit

- Winter conditions = frozen or snow-covered fields
 - No liquid manure application Dec. through March (except emergencies)
 - No solid manure application in March
 - Solid manure application allowed Dec. through Feb.
 - Conditions must not be favorable for runoff (see permit for specifics)
 - Not applied in vulnerable groundwater areas

Note: Dec. 1 – March 31 liquid and solid manure restrictions do not apply to fields that are not frozen or snow-covered so long as manure is injected or incorporated in 24 hours.

Transferred manure requirements

(no significant changes made to final permit language)

All manure generated must be land applied under the same requirements

- MMP must incorporate permit requirements
 - Nutrient Management Tool must be used for MMP
 - Manure recipients are required to follow MMP
- All manure is land applied under state rule **and permit requirements**
 - Nitrogen BMPs
 - Winter application restrictions
 - Land application site inspections
- Manure recipient provides complete land application record to feedlot

New software will
help with changes

Sampling discharges to waters of the state

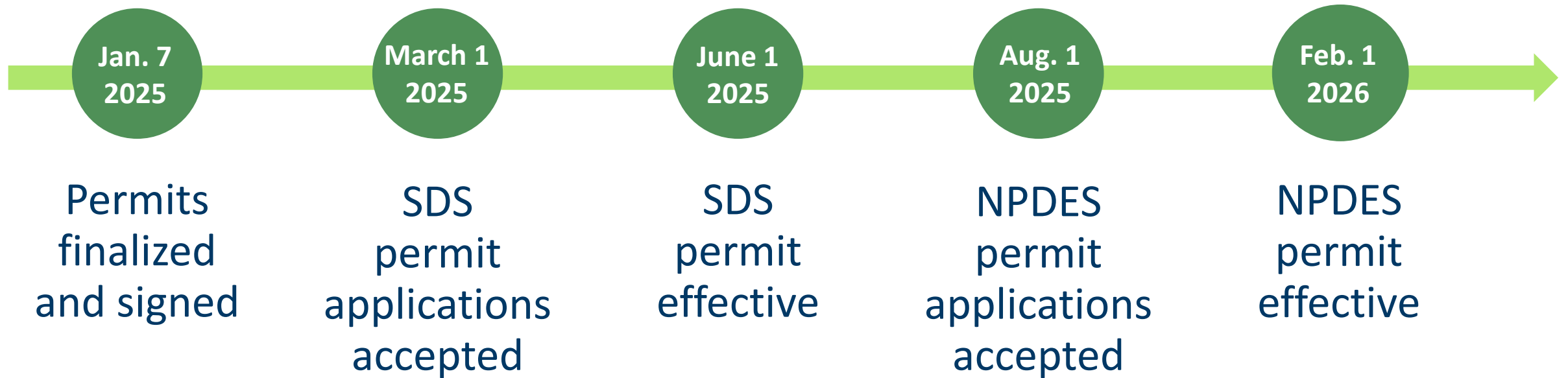
Monitoring of discharges to waters required

- Grab sample close to point of discharge
- Sample within 6 hours of discovery
 - Unless Permittee's actions have stopped the discharge
- Sampling may be delayed if...
 - Unsafe to sample
 - Representative sample cannot be obtained (widespread flooding events)
- Spills that do not reach waters will not be sampled



Implementation of permit requirements

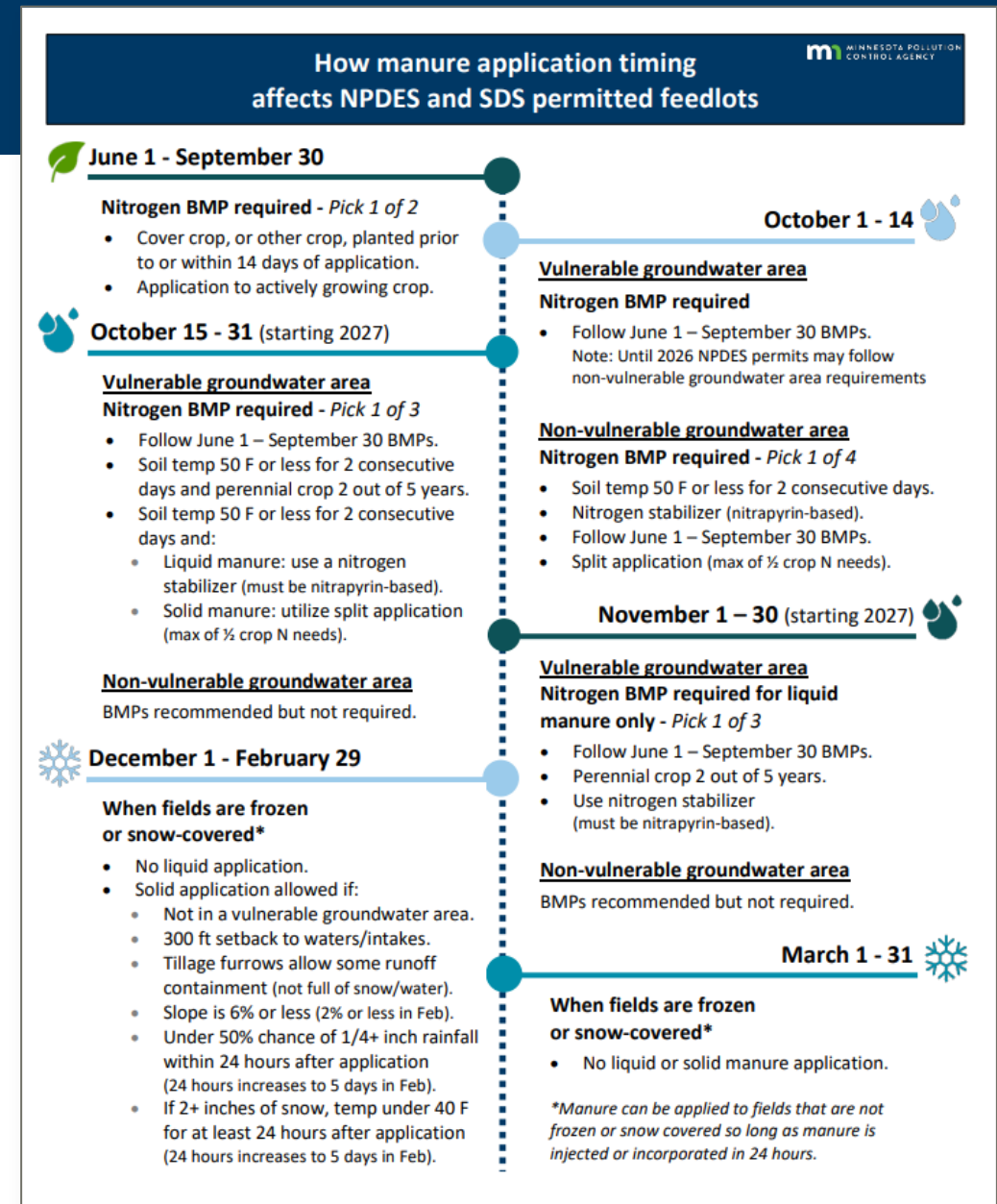
Permit effective dates and applications



Understanding the requirements

Updates to fact sheets

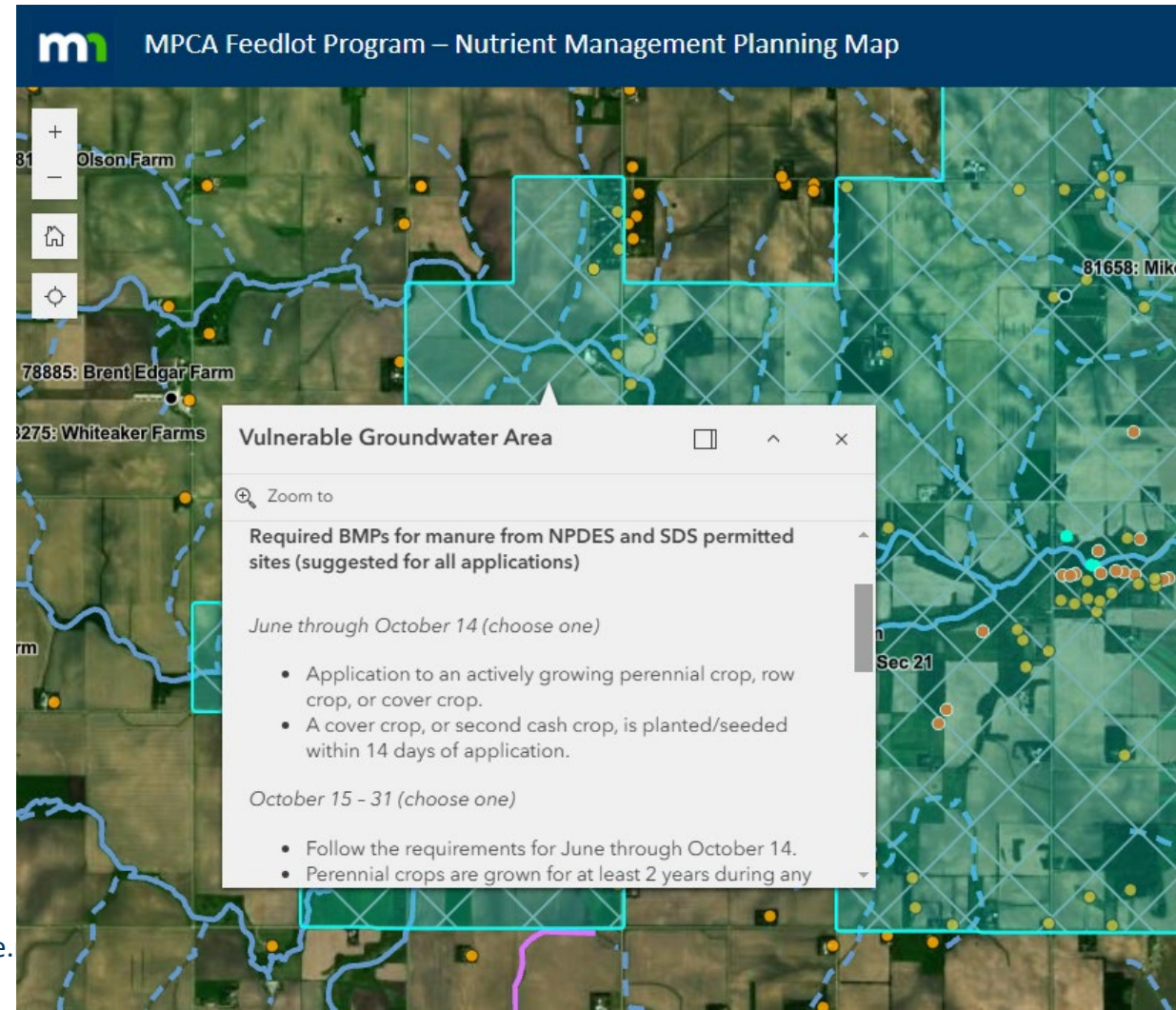
- *Notable changes to the feedlot general permits*
www.pca.state.mn.us/sites/default/files/wq-f3-55a.pdf
- *Applying manure from NPDES/SDS permitted feedlots*
www.pca.state.mn.us/sites/default/files/wq-f8-53.pdf
- Graphic summarizing timing requirements
- FAQ section with answers to common questions



New nutrient planning tools

- Nutrient Management Tool – now live
 - Required format for MMPs
 - Manure transfer tracking form (required by permits)
 - Face-to-face training events in Feb (more info coming)
- Nutrient Management Planning Map
 - Vulnerable groundwater area map

www.pca.state.mn.us/business-with-us/land-application-of-manure



Thank You

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<https://www.pca.state.mn.us/feedlots>

