

Best Management Practices for the Edgerton Rural Water Drinking Water Supply Management Area (DWSMA)

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This document is a list of the University of Minnesota nitrogen (N) fertilizer best management practices (BMPs) that apply within the Edgerton Drinking Water Supply Management Area (DWSMA). The BMPs are from the following University of Minnesota resources:

- Best Management Practices for Nitrogen Use in Southwestern and West-Central Minnesota,
- Best Management Practices for Nitrogen on Coarse Textured Soils,
- Fertilizing Corn in Minnesota, and
- University of Minnesota Extension webpage [Crop-Specific Nutrient Needs](https://extension.umn.edu/nutrient-management/crop-specific-needs) (<https://extension.umn.edu/nutrient-management/crop-specific-needs>)

Considerations when reading the tables

- The BMPs listed below are applicable to all soils or specific to coarse or fine textured soils. There are both coarse and fine textured soils across the cropland within the Edgerton DWSMA.
- The [Edgerton DWSMA Map](https://tinyurl.com/DWSMAEdgerton) (<https://tinyurl.com/DWSMAEdgerton>) identifies where coarse soils exist.
- In situations where a field includes both coarse and fine textured soils, the operator can either manage each area of the field separately or follow the BMPs for the dominant soil texture for the entire field.
- The BMPs on the final list must be implemented on 80% of the cropland (excluding soybean acres) in the DWSMA.
- Nitrogen management records need to be provided to show that a practice was adopted. If a responsible party does not provide or provides insufficient documentation showing a practice has been implemented, it counts as non-implemented during the MDA's evaluation/survey of nitrogen fertilizer BMP implementation.
- Some BMPs may not apply to all cropping systems, such as, incorporation of urea with tillage in no-till systems. If a BMP is agronomically or technically unsuitable for a specific field based on soil type, topography, crop or management system, a suitable BMP or Alternative Management Tool (AMT) can be substituted in its place.
- See the companion document "Definition of Terms in the University of Minnesota Nitrogen Fertilizer BMPs" for definitions of terms related to the BMPs. This document is available on the [Edgerton DWSMA](http://www.mda.state.mn.us/edgerton-dwsma) webpage (www.mda.state.mn.us/edgerton-dwsma).

Additional considerations for the Edgerton DWSMA

- In the Edgerton DWSMA producers growing corn currently apply nitrogen rates that are at or below the University of Minnesota Maximum Return to Nitrogen (MRTN) of the 0.075 price ratio for both corn following corn and corn following soybeans. The strategy for protecting groundwater in this DWSMA including the nitrogen BMPs listed below is predicated on nitrogen rates applied to corn remaining at or below the MRTN of the 0.075 price ratio.
- Perennial cover on cropland is highly protective of groundwater and accounts for over 50% of cropland within the DWSMA. If this perennial cover changes from its current level, review of the appropriate nitrogen fertilizer BMPs for this DWSMA may be needed and a new list of nitrogen fertilizer BMPs approved. Examples that could cause such a change include, but are not limited to, changes in land cover, changes in the cropping rotation, changes to the MDH groundwater vulnerability designations, and changes to the MDH approved DWSMA boundary.

Questions or Comments?

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Best Management Practices (BMPs)

The BMPs numbered 1 – 3 apply to all soil types and are the most important BMPs to reduce nitrate losses.

BMP	Nitrogen Rate BMPs on All Soils	Applies to
1	<p>Nitrogen rates are based on nitrogen fertilizer application guidelines from the University of Minnesota¹. Rates were last updated in 2023.</p> <p>Dryland corn following corn: at or below the MRTN of the 0.075 price ratio (currently at 190 lbs. N/ac)^{1,2}</p> <p>Dryland corn following soybean: at or below the MRTN of the 0.075 price ratio (currently at 150 lbs. N/ac)^{1,2}</p> <p>For other crops grown in the DWSMA, follow the current University of Minnesota guidance applicable to the crop³.</p>	All agronomic crops on all soils
2	Include N supplied in a starter, weed and feed program, and contributions from phosphorus fertilizers such as MAP and DAP when calculating total N rate ⁴	All agronomic crops on all soils
3	Take appropriate N credit for previous legume crops and manure used in the crop rotation ⁵	All agronomic crops on all soils

¹ Corn nitrogen rate guidelines from the University of Minnesota [Fertilizing corn in Minnesota](https://extension.umn.edu/crop-specific-needs/fertilizing-corn-minnesota) (<https://extension.umn.edu/crop-specific-needs/fertilizing-corn-minnesota>), or its successor. <https://extension.umn.edu/crop-specific-needs/fertilizing-corn-minnesota> or its successor.

² The implementation of approved Alternative Management Tools may allow a higher nitrogen rate provided that the field specific data indicates this is appropriate.

³ All crops listed at the University of Minnesota Extension webpage [Crop-Specific Nutrient Needs](https://extension.umn.edu/nutrient-management/crop-specific-needs) (<https://extension.umn.edu/nutrient-management/crop-specific-needs>) or its successor.

⁴ Total N rate should also include any AMS or other inorganic fertilizers containing nitrogen.

⁵ In addition to legumes and manure, total N rate should also include nitrogen from organic sources with a known nitrogen availability factor (i.e. research-based nitrogen availability table or laboratory analysis, including first and second year credits) such as biosolids and industrial by-products.

BMP Number	Nitrogen Placement, Timing and Source BMPs on Coarse Textured Soils	Applies to
4	Use split applications of nitrogen fertilizer ^{6,7}	Corn on coarse textured soils

⁶ This BMP only applies to corn acres that receive commercial nitrogen fertilizer. If manure is the only source of nitrogen, this BMP does not apply.

⁷ The MDA will refer to the definition of split application in the companion document “Definition of Terms in the University of Minnesota Nitrogen Fertilizer BMPs”. Practices that meet this definition will be considered meeting this BMP. This split application BMP only applies to corn acres that receive commercial nitrogen fertilizer. If manure is the only source of nitrogen, this BMP does not apply.

Maintaining records of nitrogen fertilizer use is especially important and enables the MDA to review the rate of adoption within this DWSMA during the MDA’s evaluation of nitrogen fertilizer BMPs. If records are insufficient or not provided surveyed cropland will be counted as not implementing the published nitrogen fertilizer BMPs. An example record collection form can be found on the [Edgerton DWSMA](http://www.mda.state.mn.us/edgerton-dwsma) webpage (www.mda.state.mn.us/edgerton-dwsma).

Record Keeping	Applies to
Keep records of nitrogen use, including rates, crediting of nitrogen sources, timing, placement, location, and source. MDA will provide guidance on record keeping requirements.	All agronomic crops on all soils

Additional Practices and Alternative Management Practices (AMTs)

The tables below are a list of additional practices and Alternative Management Tools. Adoption of these practices is not required in a Mitigation Level 2 DWSMA however each of the listed practices could be protective of groundwater or provide information to guide the use of nitrogen fertilizer. Farmers are encouraged to consider these practices although some may not be appropriate or applicable to every farm. LAT members acknowledged the protective potential of these practices if adoption is practicable for an individual producer or specific field within this DWSMA.

Additional Practices
Attend educational activities approved by the MDA.
Field testing to determine nitrogen requirements for specific crops.
Test manure using a lab approved or certified by the MDA.

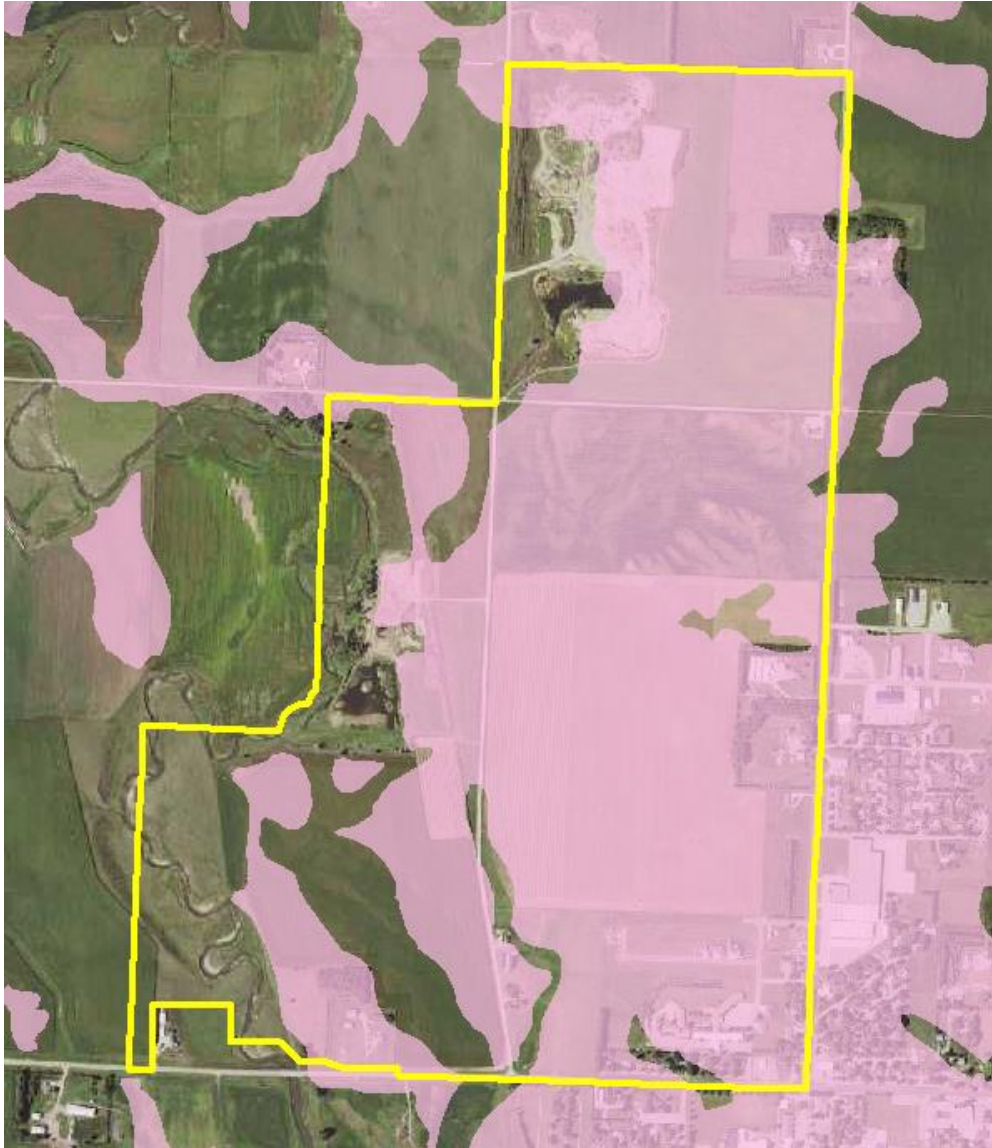
In addition to the items listed above, the MDA recognizes the prevalence of perennial cover already established on cropland in the Edgerton DWSMA. This cropland cover is highly protective of groundwater and has been accomplished through the cooperation between local leadership and cropland owners within the DWSMA.

Alternative Management Tools (AMTs)

AMTs provide additional protection from the loss of nitrogen below cropland. Included in the list of approved AMTs are the on-farm nitrogen rate trial and precision nitrogen management AMTs. Each of these provide for the ability to apply additional nitrogen if data collected from that field indicates the need for higher rates. The following is a list of AMTs that are currently approved by the MDA and have been reviewed with the local advisory team (LAT).

Alternative Management Tools (AMTs)
Minnesota Ag Water Quality Certification Program
Land Conservation Programs
Increasing Continuous Cover: Cover Crops
On Farm Nitrogen Rate Trials
Precision Nitrogen Management
Intermediate Wheatgrass (Kernza)

Map of Coarse Soils within the Edgerton Drinking Water Supply Management Area



This map shows the boundary of the Edgerton DWSMA. The yellow line outlines the moderate and highly vulnerable portions of the DWSMA. Within this area, adoption of the BMPs listed on page 2 is needed. The pink areas are coarse soils. Where the coarse soils are the dominant soil type within a field, the BMPs for coarse soils should be followed. Areas that are not identified as having coarse soils should follow the fine textured soil BMPs.