Best Management Practices for the Oak Grove Mobile Home Park 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 Oak Grove Mobile Home Park Drinking Water Supply Management Area (DWSMA). The BMPs are from the following University of Minnesota resources:

- Best Management Practices for Nitrogen use in Northwestern Minnesota,
- Best Management Practices for Nitrogen Use in Southwestern and West-Central Minnesota,
- Fertilizing Corn in Minnesota, and
- University of Minnesota Extension webpage Crop-Specific Nutrient Needs (https://extension.umn.edu/nutrient-management/crop-specific-needs)

Considerations when reading the BMP tables

- The BMPs listed are either for fine-textured soils or applicable to all soils. All cropland soils within the Oak Grove Mobile Home Park DWSMA are classified as fine-textured.
- The Oak Grove DWSMA Map (https://tinyurl.com/DWSMAOakGrove) identifies where coarse soils exist.
- 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 selected in its place.
- See the companion document "Definitions of Terms in the University of Minnesota Nitrogen Fertilizer BMPs" for definitions of terms related to the BMPs. This document is available on the Oak Grove Mobile Home Park DWSMA webpage (www.mda.state.mn.us/oakgrovemhp-dwsma).

Questions or Comments?

Ryan Perish | MDA Local Project Lead | Ryan.Perish@state.mn.us | 218-898-0002

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	Applies to
1	Corn nitrogen rates are based on the nitrogen fertilizer application guidelines from the University of Minnesota[1]. **Dryland corn following soybean:** up to the high end of the 0.10 nitrogen rate range (currently at 160 lbs. N/ac)[1,2] **Dryland corn following corn**: up to the high end of the 0.10 nitrogen rate range (currently at 200 lbs. N/ac)[1,2] For other crops grown in the DWSMA, follow the current University of Minnesota guidance applicable to that crop[3]	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), 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) 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 tables, laboratory analysis, including first and second year credits) such as biosolids and industrial by-products.

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 Oak Grove Mobile Home Park DWSMA webpage (www.mda.state.mn.us/oakgrovemhp-dwsma).

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

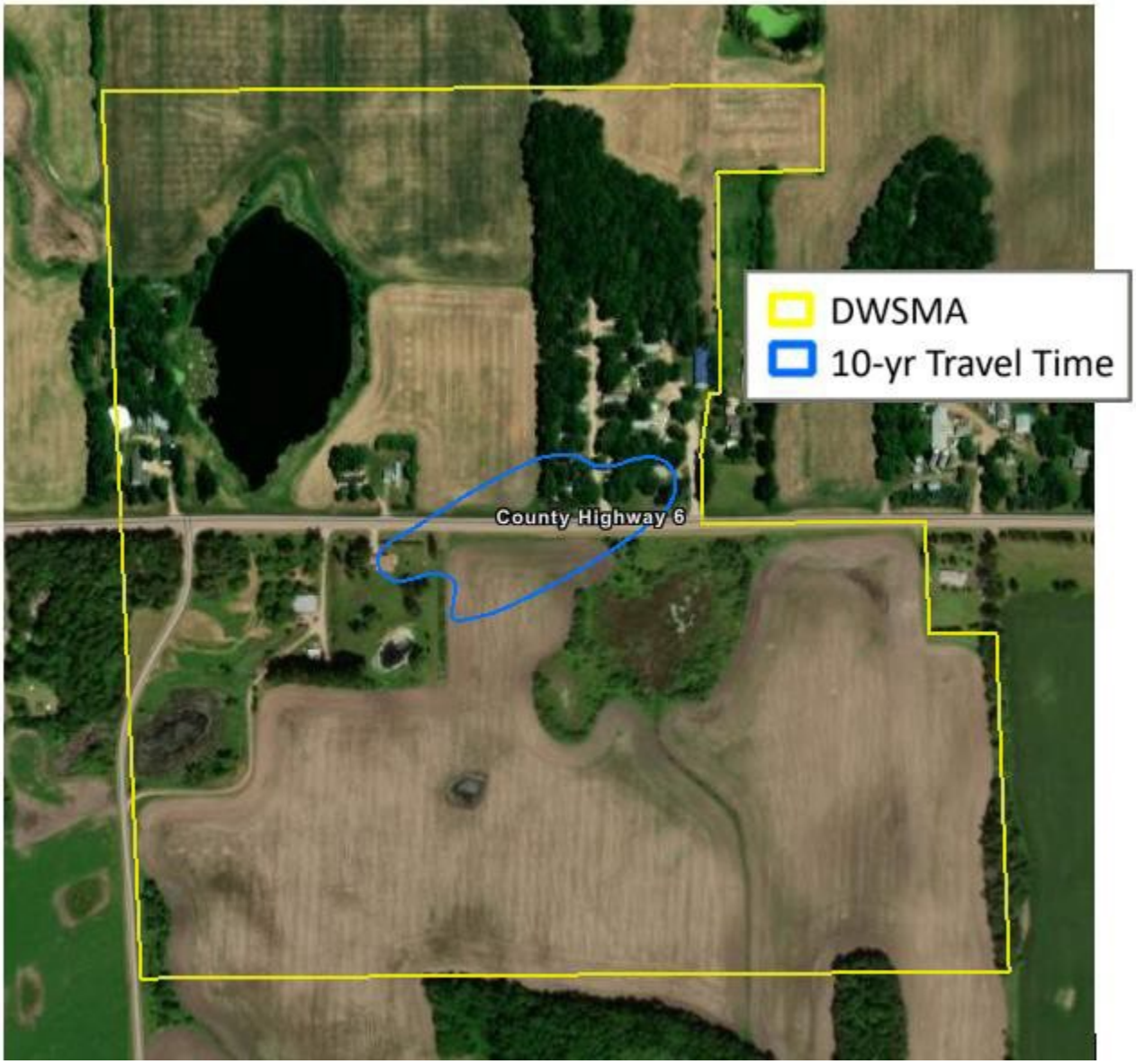
Alternative Management Tools (AMTs)

AMTs provide additional protection from the loss of nitrogen below cropland. The following is a list of AMTs that have been discussed with the LAT. The LAT acknowledges the protective potential of these practices. The MDA will work together with the LAT, Oak Grove Mobile Home Park owners, local Soil and Water Conservation District staff, and other state agencies to seek out funding to support the adoption of these AMTs within the Oak Grove Mobile Home Park DWSMA.

Producers can voluntarily adopt these AMTs. During the MDA's evaluation of nitrogen fertilizer BMPs in a Mitigation Level 2 DWSMA an AMT can substitute for a BMP. However, AMT adoption is not required to pass the BMP evaluation in a Mitigation Level 2 DWSMA.

Alternative Management Tools (AMTs)	**Applies to**
Rye cover crop following soybeans in a corn-soybean rotation. 37 acres adopting this practice can reduce the total nitrogen loss below the crop root zone by 10% within the DWSMA.	Corn-Soybean acres on all soils
Planting perennial grass in place of corn-soybean cropland acres. 8 acres adopting this practice can reduce the total nitrogen loss below the crop root zone by 10% within the DWSMA. This estimate assumes there are no cuttings and zero nitrogen is applied to the perennial grass.	Corn-Soybean acres on all soils
Planting perennial grass hay in place of corn-soybean cropland acres. 8 acres adopting this practice can reduce the total nitrogen loss below the crop root zone by 10% within the DWSMA. This estimate assumes the grass hay is cut twice each year with 40 pounds of nitrogen fertilizer applied per acre each year.	Corn-Soybean acres on all soils

Oak Grove Mobile Home Park Drinking Water Supply Management Area (DWSMA)



This map shows the boundary of the Oak Grove Mobile Home Park DWSMA. The yellow line marks the DWSMA boundary. Within this area, adoption of the BMPs listed on page 2 is needed. There are no coarse soils identified in this DWSMA.