CHAPTER 4: AGRICULTURAL MANAGEMENT PRACTICES AND PROGRAMS

INTRODUCTION

The current high quality condition of much of the Aux Sable Creek system is due, in large part, to quality agricultural practices and good stewardship. The agricultural community within the Aux Sable Creek Watershed includes grain producers, grain producers with livestock operations, and livestock operations only.

A spectrum of best management practices is available for agricultural lands. As the Watershed changes, and as agricultural lands become a smaller portion of each sub-watershed, the transition from rural to urban-rural to urban will require more focus on the importance of good land management. These pressures are currently being felt in the eastern and south eastern sub-watersheds of the Aux Sable Basin. Included below are practices that are appropriate for maintaining or improving the condition of streams in the Aux Sable Creek Watershed, as related to agribusiness activities. We have divided the practices into three categories:

- Programmatic practices associated with State and Federal agricultural programs,
- Structural practices,
- Non-structural practices.

PROGRAMMATIC PRACTICES

A variety of State and Federal programs exists for the purpose of conserving both uplands and wetlands (streams, wetlands, water bodies) within watersheds that are largely agricultural. These programs typically target open space protection, wetland protection, or stream side protection. We have listed current programs below. Programs should be verified with the current Federal and State agencies as programs are often created, suspended, terminated, or revised. Funding information for these and other programs are discussed further in Chapter 7.

Conservation Reserve Enhancement Program:

The Conservation Reserve Enhancement Program is a voluntary land retirement program. It helps agricultural land owners protect sensitive environment sites, reduce erosion, restore wildlife habitat, and protect ground and surface waters in watersheds. The program is a partnership between the State and Federal governments and is administered by the United States Department of Agriculture's

Farm Service Agency. This program is often used in concert with the Conservation Reserve Program, which is a temporary set-aside program that will be discussed below. The community based Conservation Reserve Enhancement Program addresses high priority conservation issues at the local level, but of those that are of National Significance. These include impacts to habitat for threatened and endangered wildlife species or species of special concern, reduction of accelerated erosion, reduced habitat for fish populations, and impacts to local water supplies. Specific information on enrollment in the Conservation Reserve Enhancement Program can be received by contacting the appropriate Farm Service Agency office.

Conservation Reserve Program:

The Conservation Reserve Program (CRP) is a voluntary program for agricultural landowners. The program provides annual rent payments and cost-share assistance to establish long-term resource conserving vegetation on farmland. Payments are made to producers through the Commodity Credit Corporation, as rental payments for agricultural land that is set aside for up to 50% of the participant's cost in establishing conservation practices. These rental payments are separate from conservation practice funds. Landowners enroll in Conservation Reserve Program contracts for periods of 10 to 15 years. The program is administered by the Farm Service Agency, but technical support functions are also provided by the USDA-NRCS, the State Cooperative Extension Service, State Forestry Agencies, and local Soil and Water Conservation Districts. For more information, on CRP, contact the local Farm Service Agency.

Farmable Wetlands Reserve Program:

A Farmable Wetlands Reserve Program is a voluntary program to restore up to a half million acres of farmable wetlands and associated buffers by improving agricultural land hydrology and vegetation. Eligible producers can enroll in the Farmable Wetlands Reserve Program through the Conservation Reserve Program at their local Farm Service Agency office. In order to be eligible for the Farmable Wetlands Program, the producer must have acreages that include both farmed and prior converted wetlands that have been impacted by farming activities. The maximum acreage for enrollment is 40 acres per tract of land. A producer may enroll multiple wetlands and buffers on a single tract of land provided that the total acreage does not exceed 40 acres. In order to be eligible for the Farmable Wetlands Reserve Program, the following criteria must be met.

- The land must be cropland planted in an agricultural commodity in three of the most recent crop years.
- It must be physically capable of being planted in a normal manner to an agricultural commodity.
- The wetland must be 10 acres or less, and only the first 5 acres may receive payment.
- A buffer may not exceed 3 times the size of the wetland, and participants must agree to restore hydrology to the wetland to the maximum extent practicable.

As with the Conservation Reserve Program, contracts are typically 10 to 15 years, and are compensated through annual rent payments, incentive payments, and cost-share for installation of the necessary practices to install the buffers or restore the hydrology.

Illinois Department of Agriculture Programs - T by 2000:

The Illinois Erosion and Sediment Control laws, commonly referred to as the T by 2000 Program was first implemented in 1980. The law is designed to preserve long-term productivity of Illinois soil and to protect water quality. The program continued into the 21 Century, and provides conservation and natural resource information that has economic and environmental benefits for agricultural producers. The program recognizes agricultural producers as stewards of the land and sets programmatic goals for erosion and sediment control on agricultural lands, focusing primarily on crop residue management strategies for a variety of crops. The program is administered jointly by the Illinois Department of Agriculture and the local Soil and Water Conservation District (SWCD). Each local SWCD receives funds from the Illinois Department of Agriculture, as well as other sources, to help develop and implement conservation plans designed to meet the Illinois Erosion and Sediment Control laws. Landowners interested in crop residue management programs, or other erosion control measures for their properties, should contact the appropriate SWCD in the watershed.

Illinois Department of Agricultural Livestock Management Facilities Program:

The Illinois Department of Agriculture manages the Livestock Management Facilities Act to protect citizens' rights to a safe and clean environment, as well as the rights of livestock producers to earn a living. The program fosters the relationship between the importance of animal agriculture and Illinois' economy, while recognizing the responsibility that the agribusiness community has to be good neighbors. Because

of global economic pressures, the agribusiness communities are increasingly called upon to expand their operations to maintain profitability. This trend towards expanded farms has created a need to safe guard and protect the communities and watersheds as related to livestock management facilities. The Livestock Management Facilities Program is a public input process for the siting of new livestock facilities and changes to the operations of existing livestock management facilities.

The importance in watershed planning is the need to manage and treat livestock waste and prevent its release into local streams without treatment. The Illinois Department of Agriculture has an extensive process for siting animal facilities in residential areas and setbacks from aquatic resources. For additional information, contact the Illinois Department of Agriculture.

Nutrient Management Planning:

The University of Illinois Extension, as part of a program with Illinois Department of Agriculture and the Illinois Environmental Protection Agency, oversees Nutrient Management Planning for nitrogen and phosphorous best management practices. The following summarizes the expectations for best management practices for Nutrient Management Planning in Illinois (University of Illinois Extension 2002).

Nitrogen Best Management Practices

1. Apply nitrogen fertilizers at the proper rate. Optimal rates vary from year to year depending on field use and crop rotation.
2. Take credit for in-situ or home-grown nitrogen. Legumes, animal, human, and industrial waste all contribute nitrogen to the following year's crop.
3. Take credit for incidental nitrogen. Nitrogen is often an incidental fertilizer in other fertilizer treatments. As an example, phosphorous is often applied as ammoniated phosphate. Be certain to include the nitrogen values in the nutrient management plan as part of your phosphorous considerations.
4. Be certain to apply nitrogen at the proper time for the specific crop planned for that year. The closer in time nitrogen is applied to the crop, the more available nitrogen will be and the less potential for loss of nitrogen from the field.
5. Consider the use of nitrification inhibitors to reduce the conversion rate from ammonium to nitrate. This is crucial in the application of anhydrous ammonia.

Phosphorous Best Management Practices

1. Do not maintain high levels of phosphorous in the soil. The soil should not be a depository for phosphorous.
2. Establish and maintain buffer strips where water leaves the field. Consider grass water ways and vegetative buffers anywhere water is concentrated.
3. Minimize field erosion. Phosphorous moves with soil particles.
4. Match the nutrient needs to the specific crop.
5. Where possible, grow high-yielding, high-phosphorous removing crops in fields that have high phosphorous soil tests. This will reduce phosphorous levels and reduce the potential for phosphorous to contaminate water ways.
6. Incorporate or inject phosphorous fertilizers or manures where ever possible. This should be done without destruction or damage to crop residues.

NON-STRUCTURAL BEST MANAGEMENT PRACTICES

Conservation tillage systems are the most common non-structural best management practices for agricultural systems. Conservation tillage systems include no-till, strip-till, ridge-till, and mulch-till systems. Each of these tillage types are appropriate for specific crops and soil and moisture conditions within the tract being farmed. Conservation tillage practices should be an integral part of the conservation plan for the farm. The use of conservation tillage is encouraged as part of the Federal Farm Program, the Illinois Department of Agriculture programs and local programs developed by the Soil and Water Conservation District. Additional non-structural BMPs should include crop rotations and contour farming.

STRUCTURAL BEST MANAGEMENT PRACTICES

Structural best management practices are physical alterations typically to the water conveyance system in an agricultural system that reduces the peak flow in fields. This reduces rill and gully erosion and conserves soil, reducing the amount of nutrients that reaches streams, thereby reducing algal blooms. These systems include grassed waterways under drained with tile systems, field inlets connected to tile systems, terracing, terracing with drop inlet structures, and animal barrier systems along streams. Structural practices require specific design elements. They should be implemented as part of a complete farm conservation plan.

Additional structural BMPs which can be implemented in agricultural situations, such as stream bank stabilization and riparian buffer strips, are discussed in Chapter 6.