

**Appendix O – Management of Small Livestock Operations to Protect Water
Resources**

February, 2000

MANAGEMENT OF SMALL LIVESTOCK OPERATIONS TO PROTECT WATER RESOURCES

The Pioneer-Sarah Creek Watershed Management Commission makes decisions that affect water quality in all cities within the watershed. Protecting water resources is essential to maintain the quality of life in rural Hennepin County.

As part of a survey of horse farms and feedlots in rural Hennepin County, the Hennepin Conservation District (HCD) found that the vast majority of livestock operations have fewer than 50 animals. Most of these operations do not require a permit from the Minnesota Pollution Control Agency and thus are not required to have plans for manure or pasture management. City ordinances typically do not address setbacks for livestock facilities to protect water bodies from run-off. Many owners of small livestock operations do not have adequate information to institute management practices to protect the quality of water resources.

The Citizens Advisory Committee (CAC) of the Commission is concerned that small livestock operations may adversely impact water quality. The CAC has spent the past year gathering information on this issue to develop recommendations for the cities within the watershed. Because of the opportunity to directly interact with its residents, each city is in an ideal position to provide education and institute policies to protect water resources.

Animal manure is well recognized as a fertilizer and soil conditioner that is beneficial for plant growth. In addition to providing nutrients, manure provides organic matter and moisture to cropland. In the water, however, manure is a pollutant. The ammonia in manure is very toxic to fish. Organic matter in manure also kills fish because in the process of decomposing, it uses up oxygen in the water. Excess nutrients, especially phosphorus, from runoff and soil erosion cause the accelerated build-up of algae and aquatic plants in lakes. Manure may also contaminate ground water.

Management of manure by composting, land spreading or hauling, and proper siting of storage facilities will keep manure on the soil where it is a valuable resource and out of water where it is a pollutant. Pasture management including rotational grazing, fencing to keep livestock out of wetlands and surface waters, and dispersal of manure through harrowing will decrease soil erosion and run-off, and reduce the need for pesticides and fertilizer. Proper siting of animal facilities and vegetative filter strips will reduce the potential for contamination of water bodies from run-off.

The CAC and the Watershed Commission believe that with the necessary education, information, and assistance, most citizens will take action to protect the quality of their water resources. To provide this information and assistance, the following recommendations are made to the cities of the watershed:

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MANURE MANAGEMENT

- Require plans for storage and disposal of manure as part of the building permit process for new animal facilities
- Provide information to residents about on-site composting of manure
- Facilitate manure disposal by working with other cities in the watershed and Hennepin County to provide a central composting site
- Provide to residents a list of persons/entities that will haul manure from individual farms
- Monitor commercial manure haulers to insure that the manure is being properly handled

PASTURE MANAGEMENT

- Provide information to residents about grazing and pasture management practices to reduce erosion and run-off
- Provide a list of resources for technical assistance in implementing management techniques, e.g. Hennepin Conservation District, Natural Resources Conservation Service, University of Minnesota Extension Service
- Make available to residents information about state, local, and federal programs, e.g. Conservation Reserve Program, Wildlife Habitat Incentives Program, Reinvest in Minnesota that may offer financial assistance
- Work with other cities in the watershed and Hennepin County to establish a central source for machinery rental

LOCATION OF OPERATIONS (in the building permit process)

- Require siting of barns and other facilities to minimize run-off into water sources
- Require buffers/filter strips between livestock areas and water resources
- Require that livestock areas where vegetative cover cannot be maintained and manure storage facilities be at least 300 feet from streams and rivers and 1000 feet from lakes

These recommendations, if implemented by the cities of the watershed, will provide the impetus for livestock owners to institute management practices to maintain and improve the water quality of the lakes, streams, and rivers in the watershed.