



INTRODUCTION

In February of 2016 the Cayuga County Legislature voted to adopt a plan titled *Improving Manure Management: A Fourteen-Point Countywide Agenda for Action*. The plan outlines actions the County can take to foster improvement of manure management practices and minimize the potential negative environmental impacts of manure runoff. While County officials are aware that it is necessary to examine all of the many possible sources of nutrient pollution, the adoption of the plan underscored the Legislature's desire to focus attention on matters relating to manure as an important immediate step in reaffirming its commitment to water quality.

One of the tasks discussed in the *Agenda for Action* involves developing a set of specific manure management guidelines for the County to promote. The task of developing the guidelines was assigned to the County's Water Quality Management Agency (WQMA). This document presents the results of the efforts of a working group of the WQMA to formulate guidelines intended to encourage progress through expanded voluntary use of proven, cost-effective methods, technologies, and techniques rather than force changes through legislation or rule-making. Several preliminary drafts of the guidelines were distributed to ten farmers selected to serve as advisors to the working group, and numerous significant revisions were made in response to the advisors' comments and suggestions.

Most importantly, this document emphasizes the WQMA's position that all farms that utilize manure should adopt and implement their own Comprehensive Nutrient Management Plans prepared with the assistance of qualified professionals. Since there are no one-size-fits-all management solutions, it is essential that custom plans featuring integrated practices be tailored to the unique circumstances of each farm. Although some of the text on the following pages might appear to specify minimum numerical standards, any numbers mentioned are intended to be regarded only as approximate starting points in the process of evaluating what would be appropriate in each situation.

For updates on the County's efforts to promote the use of these guidelines and produce similar material addressing other potential causes of nutrient pollution, visit the Water Quality Management Agency's website at www.cayugacounty.us/wqma.

Manure Management Guidelines

PLANNING

1. Develop and implement a Comprehensive Nutrient Management Plan (CNMP) with the assistance of an Agricultural Environmental Management (AEM) certified CNMP planner in order to adequately inventory current activities, assess environmental concerns, determine conservation objectives and establish best management practices (BMPs) consistent with available resources. Implement the BMPs and review and update the plan in accordance with schedules included in the plan.

The WQMA considers any farm that properly implements a current CNMP to be operating in a manner that addresses the County's manure management concerns. Such farms include any concentrated animal feeding operation (CAFO) covered under a current State Pollutant Discharge Elimination System (SPDES) General Permit for CAFOs. For farms without CNMPs the WQMA recommends that the following voluntary guidelines be followed until a CNMP containing integrated groupings of practices and activities based on site specific evaluation is developed and implemented.

2. While developing a CNMP, utilize resources such as Cornell University's Whole Farm Nutrient Balance Calculator and other free services of Cornell's Nutrient Management Spear Program to set goals for reducing nutrient balances where necessary to improve or maintain environmental sustainability. Set goals for phosphorus balances consistent with farm goals for fertility

management; strive for balances below 12 pounds per acre.

GENERAL

3. Test soils on all fields at least once every 1 to 3 years.
4. Test manure for nutrient content at least once per year.
5. Adjust application of manure and commercial fertilizer in order to meet crop needs.
6. Calibrate every piece of nutrient application equipment at periodic intervals established and maintained to assure acceptable accuracy and reliability.
7. Maintain 6 to 9 months of manure storage capacity to address seasonal or land base limitations.

MANURE APPLICATION

8. Determine the field soil moisture content before applying manure. This can be done by hand using the "feel and appearance" method described by the United States Department of Agriculture (USDA)¹. Avoid application of manure in areas where the moisture content of the soil is greater than 90%. Where the moisture content of the soil is between 70% and 90%, apply manure at lower rates than where the moisture content of the soil is lower.
9. Avoid application of manure when: 1) fields are saturated or prone to flood; or 2) fields are frozen; or 3) field attributes or forecasted weather conditions make runoff risk high such as when rain or the water equivalent of snow is expected in the next 24 hours

that would cause the water absorption capacity of the soil to be exceeded.

10. Apply manure in the following priority order: 1) Pre-plant as close to crop planting date as feasible; 2) To growing crops; 3) Post-harvest at prescribed rates based on prior crop removal and soil nutrient test levels and optimally in association with cover crops.
11. Avoid application in areas where the depth to the seasonal high water table is less than 1 foot in order to minimize the potential for contamination of shallow groundwater. When manure is to be applied in areas where the depth to the seasonal high water table is between 1 foot and 2 feet, consider alternative strategies such as application of manure at lower rates than in areas where the seasonal high water table is deeper.
12. Avoid applying manure within 100 feet of wells or springs. When possible and practical, avoid applying manure within 200 feet of wells or springs.
13. Design and maintain all above ground inlets to drainage systems according to NRCS standards.
14. Maintain the following setbacks from waters of the state² and surface inlets in the following priority order: 1) 35-foot setbacks where the entire setback is a vegetative buffer meeting Natural Resource Conservation Service (NRCS) standards; 2) 100-foot setbacks; and 3) 15-foot setbacks with incorporation within 24 hours of application.
15. Although managed buffers are preferable to naturally occurring buffers, maintain existing naturally occurring buffers of at least 35 feet where they may be effective along watercourses adjacent to fields.
16. Consider the hydrological connection of fields to roadside ditches and the potential for the ditches to serve as conduits for the transport of nutrient pollution to downstream surface waters. When spreading in areas of a field that may contribute runoff to a roadside ditch, maintain setbacks of at least 35 feet from the roadside ditch unless another distance would be adequate or necessary to prevent the roadside ditch from becoming a site for the discharge of runoff that may contain manure.
17. When operating in karst areas (areas where carbonate bedrock is present), follow the management practices outlined in Cornell University's *Manure Management Guidelines for Limestone Bedrock/Karst Areas of Genesee County, New York: Practices for Risk Reduction* (http://nmsp.cals.cornell.edu/publications/files/Karst_2_15_2011.pdf).
18. At least once every year observe drain tiles during and after application. If any discharge of manure occurs, take action to stop the discharge and modify practices as necessary to insure that discharges are prevented in the future.
19. Avoid providing livestock access to streams beyond the boundaries of managed pastures.

¹ United States Department of Agriculture. "Estimating Soil Moisture by Feel and Appearance." April, 1998. Available online at https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_051845.pdf. Accessed December 2016.

² For the purposes of these guidelines the definition of "waters of the state" is the same as the definition of "waters" provided in the N.Y. Environmental Conservation Law, Title 1, Section 15-0107 (<http://codes.findlaw.com/nyc/environmental-conservation-law/env-sect-15-0107.html#sthash.dRJYqES7.dpuf>).

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Cayuga County Water Quality Management Agency