

**U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK CONSERVATION PROCESS GUIDELINE**

COMPREHENSIVE NUTRIENT MANAGEMENT PLAN

KEY REFERENCES

NYSDAM: A Guide to AEM in New York State.

<http://www.agmkt.state.ny.us/soilwater/home.html>

NYSDEC: CAFO Fact Sheets 1-3.

<http://www.dec.state.ny.us/website/dow/cafohome.html>.

NY CNMP Certification & Information Website:

<http://www.agmkt.state.ny.us/soilwater/home.html>

NRCS-NY electronic Field Office Technical Guide

<http://efotg.nrcs.usda.gov/treemenuFS.aspx?Fips=36067&MenuName=menuNY.zip>

Commonly Associated Practices or Processes

The following conservation practices are commonly used in conjunction with this process to address natural resource concerns and opportunities in New York. This does not imply that any or all of the listed practices must be included or that others may not be included in a conservation management system (CMS). Consult Section III of the Field Office Technical Guide for assistance in developing a CMS.

Note: To investigate National or New York Conservation Practice Standards that may apply to this Process Guideline, use the electronic Field Office Technical Guide (eFOTG). Follow the URL, and look for Section IV:

<http://efotg.nrcs.usda.gov/treemenuFS.aspx?Fips=36067&MenuName=menuNY.zip>

Table A: Commonly Associated Processes or Practices

Number	Name	Job/Engineering Sheets
NY312	Waste Management System	
NY313	Waste Storage Facility	
328	Conservation Crop Rotation	
329 A/B/C	Residue Management – No-Till & Strip Till (A), Mulch Till (B), Ridge Till (C)	
NY393a	Filter Strip – Area	
NY393s	Filter Strip – Strip	
590	Nutrient Management	

592	Feed Management	
NY634	Manure Transfer	
633	Waste Utilization	
NY707	Barnyard Water Management System	
NY748	Record Keeping	

CULTURAL RESOURCES

A cultural resource review is not required for the development of a CNMP. It should be noted that individual practices that are listed or included in the CNMP *may* require cultural resource reviews on a practice by practice basis. Refer to the practice guideline for each practice for additional guidance. These can be located in the NRCS–NY eFOTG Section IV, ‘Practice Guidelines’. If no practice specific guideline is available, refer to the following policy statement regarding cultural resource reviews:

“Cultural resource reviews will be conducted for all ground disturbing practices, components, or other activities, as per the State Level Agreement between NRCS and the New York State Historic Preservation Officer.”

Further information and a specific listing of ground disturbing practices can be found in the ‘Cultural Resources’ folder, housed in Section II of the New York eFOTG:

<http://efotg.nrcs.usda.gov/treemenuFS.aspx?Fips=36067&MenuName=menuNY.zip>

PERMITS AND NOTIFICATIONS

All permits, easements, and rights-of-way are the responsibility of the landowner. A CNMP is a planning document, and is not a conservation practice. It should be noted, however, that conservation practices may need to be installed to complete elements of the CNMP. Refer to the practice guideline for each specific practice for permit and notification guidance. If no guideline is available, refer to the following policy statement regarding the requirement for location of utilities prior to construction activities:

The practice guidelines are accessible at eFOTG Section IV. A. Conservation practices folder:

<http://efotg.nrcs.usda.gov/treemenuFS.aspx?Fips=36067&MenuName=menuNY.zip>

“Dig Safely NY (formerly the Underground Facilities Protection Organization, or UFPO) and non-member local utilities should be contacted to assist in locating all applicable facilities in the areas that will be included in the plan. Identification and the location of all other farmstead underground or overhead facilities is also the responsibility of the landowner.”

The development of a CNMP requires compliance with the National Environmental Policy Act of 1969 (NEPA). Public and private sector certified planners must follow NRCS planning policy and procedure, and utilize NRCS Conservation Practice Standards to develop and implement a certified CNMP. In addition, the certified CNMP must be in compliance with NEPA, and requires an Environmental Evaluation (EE). The EE is completed in lieu of an Environmental Assessment (EA), or the more comprehensive Environmental Impact Statement (EIS) to satisfy NEPA environmental assessment requirements. The NRCS-CPA-52 form is to be employed as the EE screening tool. Compliance with NEPA does not waive any applicable Federal or state laws or requirements. The NRCS-CPA-52 should be completed by the certified planner during the

planning process and in concert with completion of the AEM Tier II worksheets. Information and guidance for completing the NRCS-CPA-52 can be found at:

http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_610_E_70.pdf

NRCS policy and guidance can be found at:

http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_610_Content.htm

The New York State Department of Environmental Conservation (NYSDEC), with concurrence from the U.S. Environmental Protection Agency (EPA), has developed a State Pollutant Discharge Elimination System (SPDES) permitting process for Concentrated Animal Feeding Operations (CAFO). Information regarding **General Permit GP-04-02** may be found at:

<http://www.dec.state.ny.us/website/dow/cafohome.html>.

If the CNMP is developed for CAFO purposes, an *Appendix B - Agricultural Waste Management Plan Certification* shall be completed, certified by a ‘Certified’ or ‘Conditionally Certified’ planner, and sent to NYSDEC. In the case of a Conditionally Certified Planner the CNMP must be reviewed and accepted by the CNMP Review Team before the Appendix “B” will be accepted.

The landowner is expected to check with county and municipal officials to determine if any local ordinances or regulations apply to the development or implementation of the CNMP.

INTRODUCTION

The purpose of the CNMP is to:

- 1) Manage the production, handling, storage and/or treatment of animal manure and organic byproducts generated in the area(s) of animal concentration and fertilizers; and
- 2) Manage the amount, source, form, placement, and timing of the application of these materials to the land; and
- 3) Manage soil erosion. The CNMP is applicable to Animal Feeding Operations (AFOs), and is intended to minimize the degradation of the natural resource base on the farm and to reduce the potential for off-site impacts.

When practices are installed or applied, the land included in the CNMP will meet the Resource Management System level of resource protection, meeting the minimum quality criteria. The Conservation Practice Selection Guide Sheets and the quality criteria for each land use are defined in the NRCS-NY Section III of the Field Office Technical Guide. The URL is listed below:

<http://efotg.nrcs.usda.gov/treemenuFS.aspx?Fips=36067&MenuName=menuNY.zip>

CNMPs in New York must be approved by a certified CNMP planner. Individuals with conditional certification may approve plans provided the plan has been reviewed and accepted by a CNMP Review Team. Note that other individuals independent of the certification requirements may develop or assist in the development of CNMPs.

GENERAL INFORMATION

Each CNMP planner should utilize and maintain a case file or job record to keep notes and information as received or collected from the landowner. Samples of these notes will need to be included in plans that are submitted to review teams for CNMP planner certification purposes. Include the conclusions of discussions that take place between the landowner and the planner. Note that during each stage or phase of this planning process, the information that is processed and developed should be reviewed and approved by the landowner. Successful implementation

can only occur when the producer is an active participant in the planning process. The planner and the producer should both strive to insure that they are full-fledged partners in the process.

Prior to commencement of the planning process with the landowner, the planner should review any completed AEM Tier II worksheets and the CNMP Plan Review Checklist to gain a thorough understanding of what information will be needed. The AEM Tier II worksheets can also be used to document the pre-planning or 'Benchmark' condition(s). Furthermore, utilization of the AEM Tier I and Tier II worksheets is deemed to satisfy the requirements of the Clean Water Act, the Safe Drinking Water Act, and the Coastal Zone Management Act for New York State. The AEM Tier I and II worksheets are available at:

<http://www.agmkt.state.ny.us/soilwater/home.html>

To develop a sound CNMP, there are major topics or areas of concern to be addressed. The following is a list of the topic areas to be included in the CNMP document.

Manure and Wastewater Handling/Treatment/Storage

Land Management

Nutrient Management

Record Keeping

Feed Management

Other Considerations

From consultation with the Farm Owner/Operator:

- Determine the objectives, long term goals, and future plans of the producer. Consider the complexity of the existing operation and the human resources, economics, staffing, and management. Complete the AEM Tier I and II processes, or update if the information is more than two years old. Using the worksheets will identify potential management issues or resource concerns on the farm. The completed Tier I questionnaire and the Tier II summary should be kept in the case file.
- Determine the type of farming operation, manure, waste management, and farmstead runoff handling system(s) in place or planned. Gather available records or information on soil testing, historical nutrient application amounts, timing, and methods. Evaluate and document existing BMPs and conservation practices. Some of this information can be found on the completed AEM Tier II worksheets, if available. To complete a proper evaluation of proposed or existing engineering practices (i.e. storage facilities, transfer systems, pipelines, etc.), secure the services of a qualified, licensed engineer.
- Develop the alternatives (with a thorough review of costs and O&M requirements) by addressing the categories below. This will only be accomplished with extensive consultation with the landowner, and will often include contact with other farm advisors.

Manure and Wastewater Handling/Treatment/Storage

- Characterize the type of animals, herd size, average animal weight, average weight gain/milk production (if applicable), source, quantity and consistency of waste generated, bedding material, and volume of waste water (including silage leachate, milkhouse waste, and other contaminated water or liquids that will be generated), pathogen sources and management. Some of this information may be found in the AEM Tier II worksheets. The

collected data will be used to accurately account for nutrients in CROPWARE or an equivalent nutrient management tool.

- With the producer, check the feed storage system to determine if leachate is a concern. Inspect the areas around/adjacent to the feed storage areas for evidence of damage from concentrated leachate and/or the presence of drainage systems. Existing filter areas should be maintained in sod cover. Determine if the milking center waste is collected and/or properly treated. Stormwater and low flows from heavy use areas should be directed to a storage structure or be properly treated. Clean water surface runoff and roof water should be directed away from the barnyard and other areas where a risk of contamination could occur.
- Document the pathogen management system and the handling or disposal of mortalities. Mortalities must be collected by a licensed waste hauler or properly disposed of on the farm within three days after death.

Land Management

- Identify all areas where manure is or may be land applied by equipment or livestock. This could include cropland, pasture areas, hayland, and other idle land. Note that land adjacent to perennial streams and water bodies require a manure application setback of 100 feet, unless a standard Filter Strip (NY393s) is installed. This also applies to local wells (both on-site and those on contiguous properties) within 100 feet of where manure will be applied. Intermittent streams must be protected by a manure spreading setback of 20 feet, unless the manure is immediately incorporated. Additionally, locate utilities and utility right-of ways. Note that there may be site limitations which will reduce the available acreage due to the potential of adverse water quality impacts, both on and off site.
- Any area that does not support vegetation during the growing season due to the density or the duration of livestock use should be included in the CNMP. The producer has three options to address these areas:
 - A. Treat them as extensions of the barnyard, and address the issues from heavy livestock concentrations and the potential for contaminated runoff in accordance with the Barnyard Water Management (NY707) Conservation Practice Standard; or,
 - B. Exclude animals, and manage as cropland or permanent hayland, and treat as such, given the potential limitations based on slope, proximity to surface water, soil test results, and cropping needs; or,
 - C. Incorporate the area into a Prescribed Grazing System, which meets the NRCS – New York 528 Conservation Practice Standard. Employment of this third option will require the development of a prescribed grazing plan which meets the forage needs of the livestock, given land constraints. The integrity of the sod cover must be maintained throughout the year.
- Consideration should also be given to future expansion, safety, neighbors, possible odor problems, and appearances. Utilize aerial photography or other plan map resources to identify areas where a high likelihood of adverse impact to resources could occur. This information will assist in identifying Hydrologically Sensitive Areas (HSAs), locating potential PI setback requirements, and any other setbacks, as required under local ordinances.

- In consultation with the landowner, determine if there are areas of shallow soils, exposed bedrock, sinkholes, field tile, and locations of any surface inlets. This will help to identify the presence of areas that could adversely impact groundwater resources.
- Utilize the current soil survey information to evaluate soil map units and potential inclusions for the areas identified for manure application. During the review of map units and field inspection of the proposed manure receiving area, note any areas with shallow to bedrock soils and/or sinkholes that could present a groundwater concern. Soils data will be required to complete RUSLE2 erosion documentation. Refer to the ‘RUSLE2 use in CNMP’ policy document from NRCS-NY.

This document can be found in Section I of the New York eFOTG, under G: Erosion Prediction, Water Erosion, RUSLE2, RUSLE2 Implementation Policy. A link to the eFOTG is below:

<https://my.nrcs.usda.gov/Portal/Technology/treemenuFS.aspx?Fips=36067&MenuName=menuNYNRCS.zip>

- Identify concentrated flow areas that cause a gully greater than 4” to 6” deep. Unless applied manure is incorporated immediately, these areas shall have a 20-foot setback for manure spreading or other nutrient applications, and must be treated with the appropriate practices to reduce erosion.
- Determine hydrologic group, drainage classification, and flooding frequency, which will be used in the Phosphorus and Nitrogen Indices. In most cases, frequently flooded and poorly drained portions of fields should not receive manure in the winter.
- Review and implement where possible the “Supplemental Manure Spreading Guidelines to Reduce Water Contamination During Adverse Weather Conditions” document at
<http://nmsp.css.cornell.edu/publications/winterspreadingguidelines.pdf>
- Determine the cropping system or rotations presently used, and the tillage implements and methods used with the crop rotations. Discuss possible minor alternatives to the current cropping system or rotations in the event that the current system or the proposed combination of practices does not meet the minimum soil loss requirements. Complete RUSLE2 soil loss calculations for all cropfields, long term hay fields, and pastures. Consider the combinations of rotations, tillage, and other practices that the landowner/operator uses in their operation.
- Discuss and develop alternative crop rotations and tillage methods with the landowner/operator, if required, from RUSLE2 calculation results. Note that it is possible that the current or proposed combination will reduce the soil loss to a level *below* the reduction threshold. This situation may result in greater flexibility when completing the nutrient balance in CROPWARE or equivalent tool. Proposed crop rotation changes may also affect the crop acreage needs for livestock feeding operations, current/future marketing of crops, etc.
- Check the fields to be included in the plan for other potential constraints to manure application. This may include setbacks to reduce the transport assessment value from PI runs, Nitrogen Leaching index, the “footprints” of any practices to be installed to meet the soil loss reduction requirements (waterways, terraces, diversions, etc.) or those for other regulatory requirements (filterstrips, critical area plantings, etc.). Also consider any

local ordinances or concerns. This is acreage that should **not** be included in the acreage included in CROPWARE or equivalent tool for the nutrient balancing operation.

Nutrient Management

Due to a variety of potential constraints which may not be readily apparent in the first attempt, this element of the planning procedure requires a trial-and-error process of choosing acreage and management combinations to utilize the manure and other agricultural by-products generated on the farm. The input data should be saved in a project file for subsequent alteration or refinement as the process of determining the nutrient balance is developed. Be certain to check if there any watershed nutrient restrictions in place, as this will guide which nutrient(s) to prioritize.

- Collect soil test results for each field where manure will be applied. This includes pasture areas where manure application is from pasturing animals. If current soil tests (within 3 years) are not available, soil samples will need to be analyzed by Cornell Nutrient Analysis Laboratory (CNAL) or any soil testing laboratory where equations for the Morgan conversion have been developed by CNAL for use in New York. A list of labs for which the equations have been developed is available at the SPEAR website: (<http://nmisp.css.cornell.edu/>)

Testing for Aluminum is required to make the conversion when Mehlich III soil test extraction is used. Required analyses include those for monitoring or amending annual nutrient budget (e.g. pH, soil organic matter, exchange acidity, nitrogen, phosphorus, and potassium).

- Manure/waste samples from all contributing on and off-farm sources to be land applied shall be collected and analyzed annually to determine the nutrient content and physical properties of the materials. The sample report must include results for Organic Nitrogen, Ammonia or Ammonium Nitrogen (NH₃ or NH₄ N), total P and/or P₂O₅, and total K and/or K₂O, dry matter or solids content, and other properties, such as pH, as desired or required.
- Using CROPWARE or an equivalent tool, complete the nutrient balance/allocation for the farm. For inputs, use the soils information and soil test data, and acreages representing portions of fields that are not excluded from receiving manure, and the selected or ideal crop/tillage alternatives. The nutrient application rates will be based on realistic crop yields and manure sample test results. Refer to the NRCS-New York Conservation Practice Standard 590, Nutrient Management.
- Run the Nitrate Leaching Index (NLI), and review the groundwater protection guidelines to assess the groundwater contamination risk from nutrient management application. The results of the nitrogen risk assessment may dictate a revision to the preliminary plan for nutrient application. A change in the amount of nutrients applied, the timing of application and/or the crop sequence may be needed to reduce the risk to acceptable levels. Refer to the Cornell University Nutrient Management Website (<http://nmisp.css.cornell.edu/>) for additional information and guidance, as well as Manure and Groundwater: The Case for Protective Measures and Supporting Guidelines available at: <http://nmisp.css.cornell.edu/publications/groundwater.pdf>. The New York Phosphorus Index (PI) will need to be implemented to determine relative risk of phosphorus entering a surface water body. The PI accounts for sources and transport of phosphorus. Results may dictate that phosphorus input on a field must be curtailed and/or nutrient setbacks

from surface water bodies must be established. If a manure nutrient application amount is to be reduced, the plan must account for reallocation of this manure. The critical issue is matching the timing, location, and amounts of manure to be spread with the total amount generated and corresponding inventory fluctuations and other limitations throughout the year. Explore the option of exporting manure to neighboring operations, and or manure treatment options such as digesters and composting if the landowner is lacking spreadable acres in critical times of the year. Use the selected nutrient management tool to accommodate any changes to the initial trial. Refer to the Cornell University Nutrient Management Website for the New York Phosphorus Index Users Manual (<http://nmisp.css.cornell.edu/>) for additional information and guidance, as well as Supplemental Manure Spreading Guidelines to Reduce Water Contamination Risk During Adverse Weather Conditions at

<http://nmisp.css.cornell.edu/publications/winterspreadingguidelines.pdf>

Record Keeping

Record keeping is integral to meeting the business objectives, as well as any potential regulatory and programmatic requirements. Assess the current record keeping system that is in place on the farm. Review the NRCS Record Keeping Conservation Practice Standard (NY748) for information regarding the record keeping requirements. Additionally, refer to the New York State CAFO permit for any additional record keeping requirements.

It is the responsibility of the landowner to develop and maintain a record-keeping system. The landowner may determine how these records are to be maintained.

- **Farmstead records:** This will include animal type(s), number(s), animal nutrition and feeding records/inventory, forage test results and conservation practice installation dates and records of operation and maintenance activities. Depending on local watershed concerns, or regulatory program requirements, additional records may include items such as health records, treatments, and participation in the New York State Cattle Health Assurance Program (NYSCHAP), and/or the New York State Horse Health Assurance Program (NYSHHAP).
- **Nutrient Management:** This will include manure and soil testing, equipment calibration records, rate, timing, method, location and date of manure and any additional nutrient applications. Include records of manure or other nutrient imports or exports. Weather data for a period of 24 hours prior to, during, and for 24 hours after field operations. Precipitation data must be collected at the farmstead as required by the CAFO permit.
- **Field/Land Management Records:** This will include items such as: type of crop, planting dates, rotations and tillage systems used, pesticide application, and calibration of associated equipment, and yield documentation. Weather data for a period of 24 hours prior to, during, and for 24 hours after field operations. Precipitation data must be collected at the farmstead as required by the CAFO permit.

Feed Management

The nutritionist shall consider phosphorus excretion when preparing rations for the livestock. Refer to the NRCS National Feed Management (592) Conservation Practice Standard. *NRCS has recently released a National Feed Management Standard, which is under review for use in New York. Pending release of the Feed Management (592) Conservation Practice Standard, use the AEM Tier II Feed Management worksheet for guidance.*

- Determine the type and amount of feed and forage produced, imported and exported at the farm operation. Determine feed and forage needs of the livestock at the farm operation.
- Recommend forage testing to determine the quality and nutrient content of feed and forages.
- Review feed and forage handling practices and facilities. Promote proper storage with minimal waste and degradation of feed and forage quality or degradation of surface and/or ground water resources. Refer to the AEM Tier II Feed Management Worksheet.
- Determine if leachate from feed storage is a problem, address with better management practices for feed and forage and/or collection and treatment of leachate, when present. Plan practices to address leachate issues.

Other Considerations

Beyond the scope of the CNMP, there are other environmental considerations, such as locations of and discharges from shop drains, locations and integrity of underground fuel storage tanks, agricultural storage and handling facilities, and farm related sanitary facilities located in non-residence buildings. AEM Tier II worksheets are available to assist the producer of other potential resource concerns.

Emergency Action Plan:

Develop the CNMP Emergency Action Plan. This should include a response plan for manure and pesticide spillage, fuel handling storage, catastrophic emergency situations. Include locations of equipment that can be used to assist in clean-up efforts. A map of water resources that could be impacted should also be included. Contact information for emergency services should be posted prominently in a central location.

Identify areas to receive additional manure in the event of equipment breakdown, facility failure, and/or adverse weather conditions for an extended period of time. The intent of the use of these areas is for EMERGENCY use only. The producer needs to be aware of the nature or conditions of the employment of these areas – that they are potentially liable for any off-farm adverse impacts that could occur.

APPLICATION AND EVALUATION

Provide copies of the CNMP and applicable specifications to the landowner. Explain all aspects of the plan. Additionally, review the plan review schedule and process with the landowner, highlighting the conditions by which a plan revision is REQUIRED to assure proper compliance with the CNMP and the CAFO regulations of the SPDES permit, if the operation is required to be in compliance with SPDES.

Be certain the CPA-52 form is completed, documenting the environmental evaluation that took place as part of the CNMP planning process on the farm.

If the completed CNMP meets with landowner approval, complete and certify the *Appendix B - Agricultural Waste Management Plan Certification* and submit to NYSDEC if the farm is subject to the SPDES CAFO permit. A downloadable version of the Appendix B can be found at:

<http://www.dec.state.ny.us/website/dow/cafohome.html>

REPORTING

Enter all documentation of the planning process (farm visits, decision making, etc.) on the Conservation Assistance Notes (NRCS-CPA-6/6A or equivalent). In addition, photographs documenting the existing condition/status are useful, and may be taken.

As applicable, report the practice and components in the NRCS progress reporting system. Be certain to report benefits for all applicable resources and resource concerns as allowed in the NRCS progress reporting system.

OPERATION AND MAINTENANCE

Facilities, structures, and practices must be operated and maintained to ensure proper function and longevity. Periodic follow-up with the landowner is essential to ensure that all operation and maintenance (O&M) requirements are understood and followed.

ADDITIONAL REFERENCES

Cornell Guide for Integrated Field Crop Management

Cornell Cropware: <http://nmsp.css.cornell.edu/>

Cornell Phosphorus Index (PI): <http://nmsp.css.cornell.edu/>

Cornell Nitrogen Index: <http://nmsp.css.cornell.edu/>

Cornell Soil test Conversion tables: <http://nmsp.css.cornell.edu/>

NY590 Field Guide (Pending)

Groundwater Protection Guidelines Document (Pending)

“Cultivating Farm, Neighbor, and Community Relations”, Cornell Cooperative Extension, Ithaca, NY 1996.

Various NRAES Publications – Manure Management, Odor control, and more:

<http://www.nraes.org/>

NRCS Agricultural Waste Management Field Handbook.

<http://www.ftw.nrcs.usda.gov/awmfh.html>

NRCS New York Supplements to the Agricultural Waste Management Field Handbook.

<http://www.ny.nrcs.usda.gov>

RUSLE2 Manual and Software:

http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm

Current Soil Survey Data.

New York State Department of Environmental Conservation CAFO Information:

<http://www.dec.state.ny.us/website/dow/cafohome.html>

CNMP Plan Review Checklist

New York State Cattle Health Assurance Program (NYSCHAP): <http://nyschap.vet.cornell.edu/>

New York State Horse Health Assurance Program (NYSHHAP):

<http://www.agmkt.state.ny.us/horsehealth.html>

New York State Egg Quality Assurance Program (NYSEQAP):

<http://www.agmkt.state.ny.us/programs/eggquality.html>

Conservation practice guidelines are reviewed periodically, and updated if needed. To obtain the most current version of this practice guideline, contact the Natural Resource Conservation Service.

CNMP Sample Plan

NRCS: National Planning Procedures Handbook:

http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_180_600.htm

NRCS: National Environmental Compliance Handbook

http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_610_Content.htm