CONSERVATION INFORMATION GUIDE—North Carolina

A Guide To Understanding USDA NRCS Comprehensive Nutrient Management Plans
July 2008

Purpose: To provide an overview of the purpose, contents, technical criteria, and documentation requirements for a USDA Comprehensive Nutrient Management Plan (CNMP) in North Carolina.

Document Background: In 1999, USDA set forth expectations for developing and implementing conservation plans that would address potential pollutants from animal feeding operations (AFOs). These conservation plans would address identified natural resource concerns on AFO production areas as well as land application sites, and would be developed utilizing the Natural Resources Conservation Service (NRCS) planning process of assessing environmental issues and recommending comprehensive suites of conservation practices as solutions. After NRCS developed non-regulatory technical criteria for CNMPs in 2000, USDA policy has been to only require CNMPs for AFOs participating in the NRCS Environmental Quality Incentives Program (EQIP). For all other AFOs, including those that hold North Carolina state and EPA NPDES permits, implementing a CNMP has been voluntary. Recently, due to the NC Senate Bill 1465 rule-making process as well as the EPA CAFO Supplemental Proposed Rule of March 2008, CNMP implementation has received renewed interest because it has been recognized by NC and EPA as a technically sound approach to address water quality concerns, and could thus potentially assist producers in meeting state and/or federal regulatory permitting options for new and existing concentrated confined animal operations.

North Carolina NRCS policy guidance on CNMPs can be found at:
ftp://ftp-fc.sc.egov.usda.gov/NC/NCweb/Intranet/Bulletins/2007/180-7-5.pdf
AND
ftp://ftp-fc.sc.egov.usda.gov/NC/NCweb/Intranet/Bulletins/2004/180-4-2.pdf
OR by web-searching 'North Carolina CNMP Policy'.

NRCS CNMP Technical Guidance:

Complete CNMP technical guidance can be found in the NRCS National Planning Procedures Handbook (NPPH) Part 600, Subpart E, found at: http://policy.nrcs.usda.gov/viewerFS.aspx?id=3073, or by web-searching 'NRCS CNMP Technical Guidance'.

CNMP Planning Background: Conservation planning is a natural resource problem-solving process. The process integrates ecological (natural resource), economic, and production considerations in meeting both the owner's/operator's objectives and the public's natural resource protection needs. This approach emphasizes identifying desired future conditions, improving natural resource management, minimizing conflict, and addressing problems and opportunities. Comprehensive nutrient management plans (CNMPs) are developed in accordance with NRCS conservation planning policy and rely on the planning process and established conservation practice standards.

A CNMP identifies management and conservation actions that will be followed to meet clearly defined soil and water conservation goals, including nutrient management, on an animal feeding operation (AFO). Defining soil and water conservation goals and identifying measures and schedules for attaining these goals are critical to reducing potential and actual threats to water quality and public health from AFOs. The CNMP fits within the total resource management objectives of the entire farm/animal feeding operation.

The CNMP Technical Guidance is for use by those individuals who develop or assist in the development of CNMPs. The purpose of this document is to provide technical guidance for the development of CNMPs, whether they are developed for USDA ' s voluntary programs or as a means to help satisfy the United

States Environmental Protection Agency's (USEPA) National Pollutant Discharge Elimination System (NPDES) or North Carolina state permit requirements.

Definition of a CNMP: A CNMP is a conservation plan that is unique to animal feeding operations. It is a grouping of conservation practices and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. A CNMP incorporates practices to utilize animal manure and organic by-products as a beneficial resource. A CNMP addresses natural resource concerns dealing with soil erosion, manure, and organic by-products and their potential impacts on water quality, which may derive from an AFO.

The conservation practices and management activities planned and implemented as part of a CNMP must meet NRCS technical standards, found in the Field Office Technical Guide (http://www.nrcs.usda.gov/Technical/efotg/). For those elements included by an owner and/or operator in a CNMP for which NRCS currently does not maintain technical standards (i.e., feed management, vector control, air quality), producers should meet criteria established by NC State University specialists, industry, or other technically qualified entities.

Objective of the CNMP: The objective of a CNMP is to document the AFO owner's and/or operator's plan to manage manure and organic by-products by combining conservation practices and management activities into a conservation system that, when implemented, will achieve the goal of the producer and protect or improve water quality.

In developing a CNMP with an AFO owner and/or operator, alternatives are developed that address treatment of the resources of concern and are in accordance with the applicable NRCS technical standards. The AFO owner/operator, as decision-maker, selects from these alternatives to create a CNMP that best meets his/her management objectives and environmental concerns.

CNMP implementation may require additional design, analysis or evaluations. It is important for the certified conservation planner to maintain a relationship with the producer throughout CNMP implementation to address changes or new challenges. Evaluation of the effectiveness of the CNMP may begin during the implementation phase and not end until several years after the last practice is applied. Follow-up and evaluation determines whether the implemented alternative is meeting the client needs and solving the conservation problems in a manner beneficial to the resources.

CNMP Development Criteria: CNMPs must address identified natural resource concerns associated with the management of manure and wastewater. CNMPs will meet, as a minimum, the following criteria:

- Provide documentation that addresses the items outlined in Section 600.6, Exhibit 15, Comprehensive Nutrient Management Plan-Format and Content. NC CNMP required documentation is a part of this document.
- Document the AFO owner's/operator's consideration of the six CNMP elements. It is recognized that a CNMP may not contain all six elements; however, they need to be considered by the AFO owner/operator during development of the CNMP, and the owner's and/or operator's decisions regarding each must be documented. These elements are as follows:
    - Manure and Wastewater Handling and Storage
    - Land Treatment Practices
    - Nutrient Management
    - Record Keeping
    - Feed Management
    - Other Utilization Activities
- CNMPs will contain actions that address water quality criteria for the feedlot, production area, and land on which the manure and organic by-products will be applied (i.e., as a minimum the plan would address CNMP element numbers 1, 2, 3, and 4 listed above). This includes addressing soil erosion to reduce the transport of nutrients within or off of a field to which manure is applied. For AFO owners and/or operators who do not land apply any manure or organic by-

products, the CNMP would address only the feedlot and production areas (i.e., address CNMP element numbers 1,4, and 6 listed above). CNMPs also may address erosion and sedimentation issues around AFO production facilities. In North Carolina, guidance on establishing and maintaining good vegetative cover around constructed animal production facilities must be provided to producers as part of CNMP documentation. NC specific technical information on this issue may be found at: http://www.nc.nrcs.usda.gov/technical/TechRef/Technotes.html

- Meet requirements of the NRCS Field Office Technical Guide (FOTG) conservation practice standards for all practices contained in the CNMP.
- Meet all applicable local, Tribal, State, and Federal regulations. When applicable, ensure that USEPA-NPDES or North Carolina state permit requirements are addressed.

Elemental Technical Criteria for CNMP Development: Each element of a CNMP as defined in the previous section must be addressed to meet NRCS technical standards through use of FOTG conservation practices. Each respective element must meet the following criteria:

a) Manure and Wastewater Handling and Storage

This element addresses the components and activities associated with the production facility, feedlot, manure and wastewater storage and treatment structures and areas, and any areas used to facilitate transfer of manure and wastewater. In most situations, addressing this element will require a combination of conservation practices and management activities.

(1) Criteria for Manure and Wastewater Handling and Storage

Provide for adequate collection, storage, and/or treatment of manure and organic by-products that allows land application in accordance with NRCS Nutrient Management Policy and the conservation practice standards for Nutrient Management (Code 590) and Waste Utilization (Code 633). Collection, storage, treatment, and/or transfer practices shall meet the minimum requirements as addressed in the following NRCS conservation practice standards contained in Section IV of the NRCS FOTG, as appropriate:

- Waste Storage Facility (Code 313)
- Waste Treatment Lagoon (Code 359)
- Manure Transfer (Code 634)
- Heavy Use Protection Area (Code 561)

Comply with existing federal, Tribal, State, and local regulations, associated with the following activities:

- Disposal of dead animals.
- Disposal of animal medical wastes.
- Disposal of spoiled feed or other contaminants that may be regulated by other than an NPDES or State concentrated animal feeding operation (CAFO) permitting program.

Note: NRCS does not have national conservation practice standards that address all these activities. Generally, federal, Tribal, State and local regulations dictate acceptable procedures, however, NRCS in some States has developed standards that address the disposal of dead animals by incineration or freezing.

Document the following:

- Types of animals and phases of production that exist at the facility.
- Numbers of each animal type, average weight, and period of confinement for each phase of production.
- Total estimated manure and wastewater volumes produced at facility. Where historical manure and wastewater production volumes are not documented, an estimate may be made using the procedures and tabular data provided in the NRCS Agricultural Waste Management Field Handbook (AWMFH), Chapter 4, "Waste Characteristics".

- Manure storage type, volume, and length of storage. (For more information on storage and treatment systems, how they function, their limitations, and design guidance see NRCS AWMFH, Chapter 9, "Animal Waste Management Systems", and Chapter 10, "Component Design").
- Existing transfer equipment, system, and procedures.
- Operation and maintenance activities that address the collection, storage, treatment, and transfer of manure and wastewater, including associated equipment, facilities, and structures.
- Nutrient content and volume of manure, if transferred to others.
- An emergency action plan to address spills and catastrophic events.

(b) Land Treatment Practices

This element addresses evaluation and implementation of appropriate conservation practices on sites proposed for land application of manure and organic by-products from an AFO. On fields where manure and organic by-products are applied as beneficial nutrients, it is essential that runoff and soil erosion be minimized (it should be noted that North Carolina permitted operations are subject to permit performance standards that conditionally prohibit discharge of waste) to allow for plant uptake of these nutrients. An understanding of the present land use of these fields is essential in developing a conservation system to address runoff and soil erosion adequately.

(1) Criteria for Land Treatment Practices

- An on-site visit is required to identify existing and potential natural resource concerns, problems, and opportunities for the conservation management unit (CMU).
- Identification of the potential for nitrogen and phosphorus losses from the site.
- At a minimum, the conservation system developed for this element will address the NRCS Quality Criteria for water quality, found in Section III of the FOTG. Soil erosion is to be addressed to reduce the transport of manure nutrients within or off of a field to which manure is applied. Typical NRCS conservation practices, and their corresponding NRCS conservation practice standard code number, used as part of a conservation system to *minimize* runoff and soil erosion are:
    - Conservation Crop Rotation (Code 328)
    - Residue Management, No Till and Strip Till (Code 329A)
    - Residue Management, Mulch Till (Code 329B)
    - Residue Management, Ridge Till (Code 329C)
    - Contour Buffer Strips (Code 332)
    - Cover Crop (Code 340)
    - Residue Management, Seasonal (Code 344)
    - Diversion (Code 362)
    - Windbreak and/or Shelterbelt Establishment (Code 380)
    - Riparian Forest Buffer (Code 390)
    - Filter Strip (Code 393)
    - Grassed Waterway (Code 412)
    - Prescribed Grazing (Code 528A)
    - Stripcropping (Code 585)
    - Terrace (Code 600)
- Compliance with existing, federal, Tribal, State and Local regulations or ordinances associated with soil erosion and runoff.
- Document the following:
    - Land application areas on aerial photos.
    - Individual field maps with setbacks, buffers, waterways, and other planned conservation practices marked.
    - Soils information such as features, limitations, and capability for each field.
    - Conservation practice design information.
    - Identification of sensitive areas such as sinkholes, streams, springs, lakes, ponds, wells, gullies, and drinking water sources.
- Other site information features of significance, such as property boundaries.
- Identification of operation and maintenance (O&M) practices and/or activities.

Additional considerations concerning air quality and pathogens associated with CNMP development and implementation should be addressed in this CNMP element. However, NRCS does not have specific technical criteria for these considerations required for CNMPs. NRCS guidance for air quality and pathogen considerations is found in Sec. 600.54 of the NPPH CNMP Technical Guidance.

(c) Nutrient Management

This element addresses the requirements for land application of all nutrients and organic by-products that must be evaluated and documented for each conservation management unit.

Land application of manure and organic by-products is the most common use of manure because of the nutrient and organic matter content of the material. Land application procedures must be planned and implemented in a way that minimizes potential adverse impacts to the environment and public health.

(i) Criteria for Nutrient Management

- Meet the NRCS Nutrient Management Policy as contained in the General Manual, Title 190, Part 402, (May 1999), found at: http://www.nrcs.usda.gov/Technical/ECS/nutrient/gm-190.html and clarified by the National Instruction, Nutrient Management -Policy Implementation, Title 190, Part 302, October 2000 (http://directives.sc.egov.usda.gov/).
- Meet criteria in NRCS conservation practice standards Nutrient Management (Code 590) and Waste Utilization (Code 633) and, as appropriate, Irrigation Water Management (Code 449).
- Develop a nutrient budget for nitrogen, phosphorus, and potassium that includes all potential sources of nutrients.
- Document the following:
    - Planned crop types, cropping sequence, and realistic yield targets.
    - Current soil test results for nitrogen, phosphorus, potassium, heavy metals, and sodic condition.
    - Manure and organic by-product source testing results.
    - Form, source, amount, timing, and method of application of nutrients, by field.
- Description of application equipment and method used for calibration.

(ii) Considerations for Nutrient Management

Additional considerations concerning air quality, pathogens, and salt & heavy metals associated with land application in CNMP development and implementation should be addressed in this CNMP element. However, NRCS does not have specific technical criteria for these considerations required for CNMPs. NRCS guidance for air quality, pathogen, and salt and heavy metals considerations is found in Sec. 600.54 of the NPPH CNMP Technical Guidance.

(d) Record Keeping

It is important for AFO owners and/or operators to document and demonstrate implementation activities associated with their CNMPs. Documentation of implementation and management activities associated with a CNMP provides valuable benchmark information that the AFO owner/operator can use to adjust his/her CNMP to meet production and natural resource conservation objectives.

It is the responsibility of AFO owners and/or operators to maintain records that document the implementation and management of CNMPs. Recordkeeping must also meet conditions set forth by North Carolina regulatory and/or permitting requirements.

Documentation for CNMP implementation will include:

- Annual manure tests for nutrient contents for each manure storage containment.
- Current soil test results, in accordance with Nutrient Management Code 590.

- Application records for each manure or commercial fertilizer application event, including:
    - Containment source or type and form of commercial fertilizer,
    - Field(s) where manure or organic by-products are applied,
    - Amount applied per acre,
    - Time and date of application,
    - Weather conditions during nutrient application,
    - General soil moisture condition at time of application (i.e., saturated, wet, moist, dry), and
    - Application method and equipment used.
- Crops planted and planting and/or harvesting dates, by field.
- Records that address manure and wastewater storage containment structures:
    - Dates of emptying, level before emptying, and level after emptying,
    - Discharge or overflow events, including level before and after event.
- Transfer of manure off-site or to third parties:
    - Manure nutrient content,
    - Amount of manure transferred,
    - Date of transfer, and
    - Recipient of manure.
- Activities associated with emergency spill response plan.
- Records associated with any reviews by NRCS, third-party consultants, or representatives of regulatory agencies:
    - Dates of review,
    - Name of reviewer and purpose of the review,
    - Recommendations or follow-up requirements resulting from the review, and
    - Actions taken as a result of the review.
- Records of maintenance performed associated with operation and maintenance plans.
- Nutrient application equipment calibration.
- Changes made in CNMP.

The CNMP may also address the following optional CNMP elements:

(e) Feed Management

Feed management activities may be used to reduce the nutrient content of manure that may result in less land being required to effectively utilize the manure. Feed management activities may be dealt with as a planning consideration and not as a requirement that addresses specific criteria; however, AFO owners and/or operators are encouraged to incorporate feed management as part of their nutrient management strategy. Specific information and recommendations should be obtained from NC Cooperative Extension specialists; industry; the Agricultural Research Service; or professional societies such as the Federation of Animal Science Societies (FASS) or American Registry of Professional Animal Scientists (ARPAS); or other technically qualified entities.

Specific feed management activities to address nutrient reduction in manure may include phase feeding, amino acid supplemented low crude protein diets, or the use of low phytin phosphorus grain and enzymes, such as phytase or other additives.

Feed management can be an effective approach to addressing excess nutrient production and should be encouraged; however, it also is recognized that feed management may not be a viable or acceptable alternative for all AFOs. A professional animal nutritionist should be consulted before making any recommendations associated with feed ration adjustment.

(f) Other Utilization Activities

Using environmentally safe alternatives to land application of manure and organic by-products could be an integral part of the overall CNMP. Alternative uses for animal manure are needed in areas where nutrient supply exceeds the nutrient requirements of crops, and/or where land application would cause

significant environmental risk. Manure use for energy production, including burning, methane generation, and conversion to other fuels, is being investigated and even commercially tested as a viable source of energy. Methods to reduce the weight, volume, or form of manure, such as composting or pelletizing, can reduce transportation cost, and create a more valuable product. Manure can be mixed or co-composted with industrial or municipal by-products to produce value-added material for specialized uses. Transportation options are needed to move manure from areas of over supply to areas with nutrient deficiencies (i.e., manure brokering).

More efficient and cost-effective methods are needed for manure handling, treatment, and storage. Areas in need of targeting include:

- Improved systems for solids removal from liquid manure.
- Improved manure handling, storage, and treatment methods to reduce ammonia volatilization.
- Treatment systems that transform and/or capture nutrients, trace elements, and pharmaceutically active compounds from manure.
- Improved composting and other manure stabilization techniques.
- Treatment systems to remediate or replace anaerobic lagoons.

As many of these alternatives to conventional manure management activities have not been fully developed or refined, industry standards do not always exist that provide for their consistent implementation. NRCS does not have conservation practice standards that address these other utilization options.

This element of a CNMP should be presented as a consideration for the AFO owner and/or operator in his/her decision-making process. No specific criteria need to be addressed unless an alternative utilization option is decided upon by the AFO owner and/or operator. When an AFO owner and/or operator implements this element, applicable industry standards and all federal, Tribal, State, and local regulations must be met.

NRCS Minimum Standards for Developers of CNMPs

Complete guidance on minimum standards for providers of technical assistance associated with CNMPs can be found in the NRCS General Manual, Title 180, Part 409.10 (http://directives.sc.egov.usda.gov/).

At a minimum, a CNMP must address quality criteria to the sustainable level for soil erosion ('T') and water quality for the planning unit associated with the animal feeding operation. Conservation planning activities associated with the development of a CNMP, however, should attempt to achieve a CNMP that addresses quality criteria to the RMS level for all five natural resources (soil, water, air, plants, and animals).

Any CNMP that is developed by a NRCS or partner employee will have the plan approved by a NRCS certified conservation planner (CCP), as defined by GM-180, Part 409.3 or GM-180, Part 409.9. North Carolina CCP policy can be found at: ftp://ftp-fc.sc.egov.usda.gov/NC/NCweb/Intranet/GM/GM180-NC409.pdf. CNMPs developed by professional consultants or partner agency employees will be subject to final approval by a North Carolina Certified Conservation Planner.

All CNMP elements, except Record Keeping, are technical in nature and require a certain level of acquired expertise to adequately address. To adequately address a specific element of a CNMP would require the planning and implementation of conservation practices that address the resource concerns identified for that specific element. An individual that has demonstrated a competency in planning and implementing conservation practices associated with one or more of the specific elements of a CNMP would qualify to be designated a "certified specialist."

Record Keeping is a task completed solely by the owner and/or operator and is not an element that involves an approval by a certified specialist.

The elements Feed Management and Other Utilization Options at present do not have NRCS conservation practice standards associated with their development and implementation. These elements are considerations in the planning process and do not require NRCS element certification. Should feed management become more than a consideration as a part of the CNMP a qualified animal nutritionist should be used.

General Requirements for certified CNMP developers:

(i) An awareness of the NRCS conservation planning process comparable to the information contained in the NRCS Conservation Planning Course, Modules One to Five.

(ii) An awareness of agricultural waste management systems equivalent to the information contained in the NRCS Agricultural Waste Management Systems: A Primer Course.

(iii) The contents and use of the NRCS Field Office Technical Guide as related to specific elements of the CNMP for which expertise is being provided.

(iv) Criteria associated with the various elements of a CNMP as contained in the NRCS Comprehensive Nutrient Management Planning Technical Guidance.

(v) Applicable local, State, tribal, and Federal laws and regulations that impact the elements of a CNMP.

(vi) Technical specialists approved by the North Carolina Soil & Water Conservation Commission (SWCC) in the NM/WUP category may also certify the Land Application element of the CNMP. Other categories within the scope of the SWCC technical specialist list may assist CNMP developers in associated CNMP planning, design, and implementation.

Requirements Specific to Elements of a CNMP

(i) Manure and Wastewater Handling and Storage.

This element addresses the components and activities associated with the production facility, feedlot, manure and wastewater storage and treatment structures and areas, and any areas or mechanisms used to facilitate transfer of manure and wastewater. The following are required:

(A) Knowledge adequate to design and implement conservation practices typically used to address this element of a CNMP. NRCS will identify the conservation practices typically used in North Carolina to address this element.

(B) Working knowledge of the information contained in the NRCS Agricultural Waste Management Systems Level 2 Course, or equivalent.

(ii) Land Treatment Practices.

This element addresses the land on which manure and wastewater from an animal feeding operations will be applied. The following knowledge and skills are required:

(A) Skill in applying soil loss and/or wind erosion prediction tools, as appropriate.

(B) Skill in using site vulnerability assessment tools. Acceptable site vulnerability assessment tools allowable for use in a State will be specifically identified as part of that State's certification process.

(C) Knowledge of the NRCS conservation planning process.

(D) Knowledge adequate to design and implement conservation practices common to the geographic area.

(iii) Nutrient Management.

This element addresses the requirements for land application of all nutrients and organic by-products (e.g., animal manure, commercial fertilizers, crop residues, legume credits, and irrigation water) that must be evaluated and documented for each Conservation Management Unit. The following knowledge, skills, and abilities are required:

(A) Working knowledge of the information contained in the NRCS Introduction to Water Quality Course, or equivalent.

(B) Skill in using nutrient risk assessment tools. Acceptable risk assessment tools allowed for use in a State will be identified as part of that State's certification process.

(C) Working knowledge of the information in the NRCS Nutrient and Pest Management Considerations in Conservation Planning Course, as it pertains to nutrient management, or equivalent.

(D) Skill in developing a plan to address the nutrient management conservation practice in compliance with the NRCS Nutrient Management (FOTG Practice Code 590), and, as appropriate, Irrigation Water Management (FOTG Practice Code 449) conservation practice standard(s).

(E) Training as required to gain and subsequently maintain designation by the NC Soil & Water Conservation as a Technical Specialist in the WUP/NM category.

Training

Training must be provided through NRCS training courses, on-the-job training, or equivalent courses and methods as meeting the identified training requirement. Training that is required to gain CNMP category certifications is detailed for each category at the NRCS TechReg website, http://techreg.usda.gov/.

Maintaining Certifications

Certified specialists are responsible for keeping and completing updating of their own individual development plan to reflect training needed and to maintain or increase their skill level. Training to maintain and update skills must, at a minimum, occur once every three years.

Certified Specialists

NRCS will maintain a list of certified specialists. Currently, a list of certified specialists for North Carolina in each approved CNMP category can be found at the NRCS TechReg website, http://techreg.usda.gov/ Each NRCS-approved source of a certification program for third parties will maintain a current list of specialists certified by that program and will make it available to the State Conservationist.

COMPREHENSIVE NUTRIENT MANAGEMENT PLAN (CNMP) – North Carolina

NC CNMP Required Documentation

The items identified in the Plan column must be documented in the Conservation Plan/CNMP to complete planning. The items in the Design column may be completed during the practice design for the specific CNMP components. Compliance with NC or EPA regulatory permitting options may require items in the check out column to be completed. Referenced NC NRCS conservation practice standards that comprise the Field Offce Technical Guide (FOTG) may be obtained at: *http://www.nrcs.usda.gov/technical/efotg/. Although this plan may be developed by appropriately qualified technical specialists, the CNMP is subject to final approval by a Certified Conservation Planner (CCP), as designated by USDA NRCS.*

Documentation Required

CNMP Plan	CNMP Practice Design	CNMP Check out	Site information
			Names, phone numbers, and addresses of the AFO owner(s) and operator(s).
✓			Location of production site: Legal description, driving instructions from nearest post office, and/or the emergency 911 coordinates.
✓			Conservation plan map, and farmstead sketch showing the general location of barns, pens, storage structures, etc. Clearly identified field identification numbers or codes are shown on plan map.
✓			Soils maps with interpretations appropriate for planned CNMP practices. Available from NRCS field offices or NRCS Web Soil Survey for many areas. http://websoilsurvey.nrcs.usda.gov/app/
	✓	✓	Existing documentation of present facility components that would aid in evaluating existing conditions, capacities, etc. (i.e., as-built plans, year installed, number of animals a component was originally designed for, etc.).
Plan	**Design**	**Check out**	
✓			Animal Inventory Sheet: Animal types, phases of production, and length of confinement for each type at this site. ftp://ftp-fc.sc.egov.usda.gov/NC/NCweb/Technical/technical-references/CNMPchecklist.pdf
✓			Animal numbers and average weight for each phase of production on this site. Information available from NRCS 633 Waste Utilization Standard.
✓			Calculated manure and wastewater volumes for this site. Amount of manure and wastewater to be land applied. Information available from NRCS 633 Waste Utilization Standard.
	✓		Manure storage type, volume, and approximate length of storage.
Plan	**Design**	**Check out**	
✓			Producer and operators informed of their responsibilities to comply with any applicable Federal, tribal, state, or local permits and/or ordinances, including operator certification, NPDES or other federal/state permits.

NC CNMP Required Documentation

Plan	Design	Check out	
✓			Nutrient management (590)/waste utilization (633) plan prepared in accordance with applicable FOTG standards, including but not limited to:
✓			▪ Maps of land application area (field identified consistent with plan map) showing land use and with marked setbacks, buffers, and waterways, and environmentally sensitive areas. *Shaded areas required for all land application fields owned or controlled by the producer.*
✓			▪ Third-party applicator/manure hauler agreement with documentation of amount of waste transferred—NRCS 633 EXHIBIT B
✓			▪ Landowner names, addresses, for land application fields not owned by producer.
✓			▪ Phosphorus Loss Assessment Tool (PLAT) and/or LI risk assessments for potential nitrogen or phosphorus transport from fields. PLAT software available for download at: *http://www.soil.ncsu.edu/nmp/ncnmwg/*
✓			▪ Crop types, realistic yield targets, and expected nutrient uptake amounts.
✓			▪ Application equipment descriptions and methods of application.
✓			▪ Expected application seasons and estimated days of application per season.
✓			▪ Estimated application amounts per acre (volume in gallons or tons per acre, and pounds of plant available nitrogen, phosphorus as P205, and potassium as K20 per acre).
✓			▪ Estimate of acres needed to apply manure generated on this site, respecting any guidelines published for nitrogen or phosphorus soil loading limits.
✓			▪ Lagoon Sludge Application Caution Page *ftp://ftp-fc.sc.egov.usda.gov/NC/NCweb/Technical/technical-references/CNMPchecklist.pdf*
		✓	▪ Application rates do not exceed limiting nutrient (N or P) specified in plan
Plan	**Design**	**Check out**	
✓		✓	Practices exist, or are planned, that achieve sustainable soil loss tolerance (based on soil type) on land application area (i.e., residue management, cropping rotation, diversions). (Check out completed only when planned practices are implemented to meet NRCS standards).
✓			RUSLE Worksheet (Current Version). RUSLE 2 software available for download at: *http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm*
✓			NC-CPA-52 Environmental Assessment. Form and instructions available at *http://www.nc.nrcs.usda.gov/technical/TechRef/CPForms.html*
	✓	✓	Practice designs/specifications for erosion control practices per applicable FOTG standards.
Plan	**Design**	**Check out**	**Manure & Wastewater Storage and Handling**
	✓		Practice designs/specifications for manure and wastewater storage, treatment, and handling practices per applicable FOTG standards, including emergency action plans.
	✓	✓	Critically eroding areas around manure and wastewater storage structures stabilized to facilitate proper operation and maintenance of the structures.

NC CNMP Required Documentation

Plan	Design	Check out	
✓			Producer informed of record-keeping responsibilities according to 590 and 633 standards, and applicable state regulations on the storage, transport, transfer, testing, and application of manure. Including but not limited to:
✓			▪ Soil and manure test reports.
✓		✓	▪ Applied rates, methods of application, and timing (month and year) of nutrients applied (include all sources of nutrients-manure, commercial fertilizers, etc.).
✓			▪ Current and/or planned crop rotation.
✓			▪ Weather conditions during nutrient application (optional).
✓			▪ General soil moisture condition at time of application [i.e., saturated, wet, moist, dry] (optional).
✓		✓	▪ Actual crop and yield harvest from manure application sites if used in lieu of RYEs.
✓		✓	▪ Record of internal inspections for manure system components.
✓		✓	▪ Record of any spill events.
✓			▪ Changes or modifications to CNMP
Plan	**Design**	**Check out**	
✓			Practices planned for morality disposal.
	✓		Design specifications and equipment used to implement the disposal plan.
		✓	Practices designed to properly dispose of operation mortality are implemented according to NC standards and/or practice design
Plan	**Design**	**Check out**	
	✓		Detailed operation and maintenance procedures for the conservation system, holding facility, etc., contained in the CNMP. This would include procedures such as calibration of land application equipment, storage facility emptying schedule, soil and manure sampling techniques, etc.
✓			Client has been provided guidance on establishing and maintaining good vegetative cover on areas around constructed agricultural facilities (such as poultry houses). If necessary, client should utilize NC Technical Note for Erosion and Sediment Control Planning at Animal Feeding Operations found in Sec I of the NC NRCS Field Office Technical Guide.