United States Department of Agriculture

NRCS

6200 Jefferson NE
Albuquerque, New Mexico 87109
Phone: (505) 761-4400 **Fax**: (505) 761-4462
Web site: www.nm.nrcs.usda.gov

December 7, 2006

NATIONAL PLANNING PROCEDURES HANDBOOK (NPPH)
180-VI

AMENDMENT NM11 (PART 600.5)

SUBJECT: CPA – COMPREHENSIVE NUTRIENT MANAGEMENT PLANNING TECHNICAL GUIDANCE, NEW MEXICO

TO: All Offices

Purpose. To supplement NPPH with updated CNMP Technical Guidance.

Effective Date. Effective upon receipt

Filing instructions: File in the Field Office copy of the National Planning Procedures Handbook, Part 600.5, Comprehensive Nutrient Management Planning Technical Guidance, New Mexico.

Attached is a copy of the New Mexico Comprehensive Nutrient Management Planning Technical Guidance.

DENNIS ALEXANDER
State Conservationist

DIST: NPPH

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

An Equal Opportunity Provider and Employer

PART 600.6 Exhibits

Subpart F

Exhibit 1 – Sample Resource Checklist

Exhibit 2 – (Reserved)

Exhibit 3 – Environmental Effects for Conservation Plans and Areawide Conservation Plans

Exhibit 4 – Site Specific Practice Effects

Exhibit 5 – Resource Management Systems Options

Exhibit 6-12 – (Reserved)

Exhibit 13 – Relationship of the Planning Process and FOTG

Exhibit 14 – Relationship of the Planning Process and RMS Tools

~~Exhibit 15 – Comprehensive Nutrient Management Plan – Format and Content~~ delete
(Now located in Part 600.5)

United States Department of Agriculture
6200 Jefferson NE
Albuquerque, New Mexico 87109-3734
Phone: (505) 761-4400 **Fax**: (505) 761-4402
Web site: www.nm.nrcs.usda.gov

Comprehensive Nutrient Management Planning Technical Guidance, New Mexico

September, 2001, updated October, 2006

The Natural Resources Conservation Service, formerly the Soil Conservation Service, works hand-in-hand with the American people to conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER

(180-vi-NPPH, Amendment NM 11, October 2006)

COMPREHENSIVE NUTRIENT MANAGEMENT PLANNING TECHNICAL GUIDANCE, NEW MEXICO

September, 2001, updated October, 2006

Contents

	Page
1.0 INTRODUCTION	**3**
2.0 DEFINITION	**4**
3.0 OBJECTIVE	**5**
4.0 CNMP ELEMENTS	**5**
5.0 CERTIFICATION	**13**
6.0 APPENDICES	
A. COMPREHENSIVE NUTRIENT MANAGEMENT PLANNING PROCESS	**15**
B. TECHNICAL REFERENCES, HANDBOOKS, AND POLICY DIRECTIVES	**17**
C. SUGGESTED FORMAT OF COMPREHENSIVE NUTRIENT MANAGEMENT PLAN	**19**
D. CONSERVATION PRACTICE STANDARDS	**24**
E. FIELD OFFICE TECHNICAL GUIDE	**26**
F. CERTIFICATION REQUIREMENTS AND TRAINING FOR CNMP	**27**
G. PROCESS FOR PLANNING AND DESIGNING AG WASTE SYSTEMS	**31**
H. NEW MEXICO NRCS OFFICES	**42**

COMPREHENSIVE NUTRIENT MANAGEMENT PLANNING TECHNICAL GUIDANCE, NEW MEXICO

October, 2006

1.0 INTRODUCTION

Comprehensive Nutrient Management Planning (CNMP) results in implementation of resource management systems which are in concert with the interagency mission of the conservation partnership ("Working with people and partners in New Mexico to care for the land") and watershed objectives. Systems will be developed to manage agricultural by-products from the point of origin to the ultimate place and purpose of use with consideration given to on-site and off-site soil, water, air, plant, animal and human resources effects. Landowners will be encouraged to implement these plans within the development of a resource management plan.

This document is intended for use by Natural Resources Conservation Service (NRCS) and conservation partner state and local field staffs, private consultants, landowners/operators, and others that either will be developing or assisting in the development of comprehensive nutrient management plans (CNMPs). The purpose of this document is to provide guidance for the development of CNMPs, not to establish regulatory requirements for local, tribal, state, or federal programs. This guidance is not intended as a sole source of reference for developing CNMPs. Rather, it is to be used as a tool in support of the planning process, as contained in the NRCS National Planning Procedures Handbook (NPPH) (see Appendix A). It provides a list of essential elements that need to be considered in developing a CNMP. To effectively use this guidance, the planner needs a solid understanding of manure management systems, plant nutrient management, the NRCS planning process, and the NRCS Field Office Technical Guide.

New Mexico Interagency Animal Feeding Comprehensive Nutrient Management Planning Workgroup

In response to the AFO/CAFO Strategy of the Clean Water Action Plan, the New Mexico Interagency Animal Feeding Operation Comprehensive Nutrient Management Planning Workgroup was established in January, 1999. The workgroup comprises representatives of USDA-Natural Resources Conservation Service, New Mexico Environment Department, New Mexico Department of Agriculture, New Mexico Cooperative Extension Service, New Mexico State University, U.S. Environmental Protection Agency, U.S. Geological Survey, Dairy Producers Association, New Mexico Cattle Growers Association, New Mexico Farm and Livestock Bureau, and others.

The workgroup was established to help identify and address animal organic nutrient management/crop nutrient management planning issues in New Mexico. The workgroup also is working to develop a voluntary, user-friendly planning process within state to satisfy federal, state, and local regulations.

The workgroup developed an interagency comprehensive nutrient management planning notebook, certification process, and training as well as reviewed standards and developing/adapting tools for New Mexico use. The workgroup process has included defining the role of each agency in planning and implementing animal organic nutrient management

within state as well as developing one planning process that is acceptable and user-friendly to agencies and producers.

2.0 DEFINITION

A Comprehensive Nutrient Management Plan (CNMP) is a conservation plan that is unique to animal feeding operations. A CNMP is a grouping of conservation practices and management activities which, when combined into a resource management system, will help to ensure that both production and natural resource conservation goals are achieved. It incorporates practices to fully utilize animal manure and other organic by-products (any organic material applied to the land as a nutrient source) as a beneficial resource. A CNMP addresses natural resource concerns dealing with agricultural by-products and their potentially adverse impacts on water quality. A CNMP is developed to assist an AFO owner/operator in meeting all applicable local, tribal, State, and Federal regulations.

CNMPs shall be planned in accordance with the procedures identified in the USDA Natural Resources Conservation Service National Planning Procedures Handbook, Amendment 2 (Appendix B), and designed, constructed, and operated in accordance with NRCS Conservation Practice Standards. The NRCS Agricultural Waste Management Field Handbook (AWMFH) and Field Office Technical Guide (FOTG) as well as the New Mexico Interagency Comprehensive Nutrient Management Planning Training Manual will serve as essential references in developing a CNMP.

General policy includes:

1. CNMPs will consider manure handling and storage, land treatment practices, nutrient management, record keeping, feed management and acceptable alternatives for use or disposal of excess nutrients produced or imported onto the production unit. CNMPs are site specific and written to address the goals and needs of the individual owner/operator in consideration of the environment, public health and water quality. The specific practices used to implement each component will vary to reflect site-specific conditions or needs of the watershed.
2. Technical assistance may be provided in one or more of the following: planning, design, or implementation of a comprehensive nutrient management plan, based on landowner needs and consistent with watershed objectives. NRCS will provide technical assistance, as personnel are available.
3. No design or implementation assistance will be provided until a complete comprehensive nutrient management plan has been developed although preliminary survey and soil investigations will be provided as needed for preparation of the CNMP.
4. For each comprehensive nutrient management plan, a complete inventory and evaluation will be conducted in accordance with the National Planning Procedures Handbook and Conservation Plan.
5. CNMPs will help to ensure that an adequate land base exists for utilization of generated and imported nutrients or provide alternative methods to minimize environmental risk, where insufficient land base exists.
6. On land receiving manure applications, soil erosion and concentrated flow control measures will be included as needed.

3.0 OBJECTIVE

The objective of a CNMP is to document the AFO owner's/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. Ultimately, it is the landowner's/operator's responsibility as the decision-maker to select the system of conservation practices and management activities that best meet his/her production and environmental needs from the alternatives available.

The conservation practices and management activities in a CNMP for which NRCS maintains technical standards are to meet these standards. Elements of a CNMP for which NRCS does not currently maintain standards are to meet criteria established by Land Grant Universities, Industry or appropriate others

4.0 CNMP ELEMENTS

General Criteria for CNMP Development:

CNMPs will, as a minimum, meet the following criteria:

- Provide documentation that addresses the items outlined in Section 600.6, Exhibit 15, Comprehensive Nutrient Management Plan-Format and Content.
- Document the AFO owners/operators 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/operator's decisions regarding each must be documented. These elements are as follows:
  - Manure and Wastewater Handling and Storage
  - Land Treatment Practices
  - Nutrient Management
  - Feed Management
  - Other Utilization Activities
- 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 State permit requirements (i.e., minimum standards and special conditions) are addressed.

Element Criteria for CNMP Development:

(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 standard for Nutrient Management (Code 590). 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)

- 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.

- 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.

2. Considerations for Manure and Wastewater Handling and Storage

Additional considerations associated with CNMP development and implementation should be addressed. However, NRCS does not have specific technical criteria for these considerations that are required for CNMPs. These considerations are:

Air Quality

During the CNMP development process, AFO operators/owners need to consider the impact of selected conservation practices on air quality .Air quality in and around structures, waste storage areas, and treatment sites may be impaired by excessive dust, gaseous emissions, and odors. Poor air quality may affect the health of workers, animals, and persons living in the surrounding areas. Ammonia emissions from animal operations may be deposited to surface waters, increasing the nutrient load. Proper siting of structures and waste storage facilities can enhance dispersion and dilution of odorous gases. Conservation buffers placed with regard to prevailing wind patterns can intercept movement of some airborne pollutants. Enclosing a waste storage or treatment facility can reduce gaseous emissions from AFOs in areas with residential development.

Pathogens

During the CNMP development process, AFO operators/owners need to consider the impact of selected conservation practices on pathogen control. Pathogenic organisms occur naturally in animal wastes. Exposure to some pathogens can cause illness to humans and animals, especially for immune-deficient populations. Many of the same conservation practices used to prevent nutrient movement from animal operations, such as leaching, runoff, and erosion control are likely to minimize the movement of pathogens. Certain waste treatment systems can further reduce the pathogen content of manure.

(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 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 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)
- 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)
- Irrigation Land Leveling (Code 464)
- Irrigation Water Management (Code 449)
- Cross Wind Ridges (Code 589a)
- Cross Wind Stripcropping (Code 589b)
- Cross Wind Trap Strips (Code 589c)

- 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, shallow water tables, 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.

Notes:

- A documented record will be kept of the site assessment for each CMU. As part of the CNMP, the record will need to address problems or concerns identified during the on-site assessment of the land application unit.

- The operation and maintenance plan will need to address all structural and operational components in the CNMP.

- This planning and assessment process integrates economic, social, and environmental considerations into a system that meets the needs of the natural resources and assists the landowner/operator in meeting Federal, State, Tribal and local requirements. Each conservation practice posed as an alternative to address identified resource concerns will be evaluated according to potential impacts on resources, including soil, water, air, plant, and animal.

- Technical requirements will be in accordance with the NRCS National Planning Procedures Handbook (NPPH) and the FOTG (see Appendix B) as well as state and federal regulation references.

(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 CMU.

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.

1. Criteria for Nutrient Management

- Meet the NRCS Nutrient Management Policy as contained in the NRCS GM 190, Part 402, May 1999, and clarified by the National Instruction, Nutrient Management - Policy Implementation, Title 190, Part 302, October 2000.
- Meet criteria in NRCS conservation practice standard Nutrient Management (Code 590) 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.

2.Considerations for Nutrient Management

- Additional considerations associated with CNMP development and implementation should be addressed. However, NRCS does not have specific required technical criteria for these considerations for CNMPs. These considerations are:

Air Quality

AFO operators/owners should consider the impact of selected conservation practices on air quality during the CNMP development process. Air quality on land application sites may be impaired by excessive dust, gaseous emissions, and odors. Poor air quality may affect the health of workers, as well as animals and persons living in the surroundingareas. Ammonia emissions from animal operations may be deposited to surface waters, increasing the nutrient load. Soil incorporation of manure and organic by-products on land application sites can reduce gaseous emissions.

Pathogens

AFO operators/owners should consider the impact of selected conservation practices on pathogen control during the CNMP development process. Pathogenic organisims occur naturally in animal waste. Exposure to some pathogens can cause illness in humans and animals, especially for immune-deficient populations. Many of the same conservation practices used to prevent nutrient movement from animal operations, such as leaching, runoff and erosion control, are likely to prevent the movement of pathogens.

Salt and Heavy Metals

Build up of salt and heavy metals (i.e., arsenic, selenium, cadmium, molybdenum, zinc) in soils can create a potential for human and animal health problems and threaten soil productivity and crop marketability. Federal and State regulations do not address the heavy metal content associated with agricultural by-products. In developing a CNMP, the build-up of salt and heavy metals should be tracked through soil testing. Additional guidance on salt and heavy metal contamination from manure is available in the following:

- NRCS Agricultural Waste Management Field Handbook, Sections 651.1103 and 651.0604(b) deal with the salt content of agricultural waste.
- NRCS Agricultural Waste Management Field Handbook, Sections 651.0603(g) and 651.0605(a and b) deal with the heavy metal content of agricultural waste.
- USEPA Title 40 Part 503 -Standards for the Use or Disposal of Sewage Sludge. Section 503.13 contains pollutant limits for biosolids heavy metal content and cumulative loading rates, but does not address resident levels of metals in the soil.

(d) Record Keeping

It is important for AFO owners/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. Records should be maintained on-site for a period of 5 years or longer.

Documentation will include:

- 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.
  - Date of application.
  - Application method and equipment used.

- Crops planted and planting and/or harvesting dates, by field
- Manure, lagoon sampling results
- Records that address manure and wastewater storage containment structures:
  - Dates of emptying, level before emptying, and level after emptying, and discharge or overflow events, including level before and after event.
- Transfer of manure off-site or to third parties:
  - Manure nutrient content (N, P, K)
  - Amount of manure transferred.
  - Date of transfer.
  - Recipient of manure (name, address, phone)
- Available maps, sketches and designs resulting from the planning process that will be useful to the producer in implementing the plan
- Environmental evaluations
- Monitoring well results
- Activities associated with emergency spill response plan.
- Documentation of soils/geologic investigation.
- As-built plans available onsite.
- 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.
  - Actions taken as a result of the review.
- Records of maintenance performed associated with operation and maintenance plans.
- Changes made in CNMP.

(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/operators are encouraged to incorporate feed management as part of their nutrient management strategy. Specific information and recommendations should be obtained from the Cooperative State Research, Education, and Extension Service; Land Grant Universities; industry; the Agricultural Research Service; or professional societies such as the Federation of Animal Science Societies (FASS) or American Registry of Professional Animal (ARPAS); or other technically qualified entities.

An example of the effective use of feed management is presented as follows:

If a dairy cow is fed 0.04 percent above recommended levels of dietary phosphorus, she will excrete an additional six pounds of phosphorus annually. For a herd of 500 cows, this is an additional 3,000 pounds of phosphorus per year. In a single cropping system, corn silage is about 0.2 percent phosphorus on a dry matter basis. For a field yielding 30 tons of silage per acre, at 30 percent dry matter, this is 36 pounds of phosphorus in the crop. If an additional 3,000 pounds of phosphorus are recovered in manure it takes considerably more land for application if manure is

applied on a phosphorus basis. “Dr. Deanne Meyer, Livestock Waste Management Specialist, Cooperative Extension, University of California.

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:

1. Improved systems for solids removal from liquid manure
2. Improved manure handling, storage, and treatment methods to reduce ammonia volatilization.
3. Treatment systems that transform and/or capture nutrients, trace elements, and pharmaceutically active compounds from manure.
4. Improved composting and other manure stabilization techniques.
5. 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. Except for the NRCS conservation practice standard Composting Facility (Code 317), 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/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.

5.0 CERTIFICATION

The development of a CNMP involves two types of skilled individuals. The "Conservation Planner-CNMP" is an individual who has been certified by NRCS with the ability to develop the overall CNMP. The "Conservation Planner-CNMP" pulls together all of the elements of a CNMP. The "Certified Specialist-CNMP" is an individual who has the skill to develop one or more of the elements of a CNMP as certified by NRCS.

Any CNMP that is developed by an NRCS or partner employee will have the plan approved by a certified Conservation Planner. The development of a CNMP by third party vendors or other approved sources does not imply concurrence or plan approval by NRCS.

CERTIFIED CNMP SPECIALIST CERTIFICATION REQUIREMENTS:

(as stated in NRCS General Manual 180-CPA, NM, 4/01)

Certified CNMP specialists are individuals who have demonstrated a competency in developing an element of a CNMP. Listed below are the general requirements and those specific to each element of a CNMP.

General Requirements:

1. An awareness of the NRCS conservation planning policy process comparable to the information contained in the NRCS "Conservation Planning Modules 1-5".
2. An awareness of agricultural waste management systems equivalent to the information contained in NRCS' Agricultural Waste Management Systems: A Primer Course.
3. Demonstrated ability to use applicable sections of the local Field Office Technical Guide.
4. Knowledge of criteria associated with the various elements of a CNMP as contained in the "Comprehensive Nutrient Management Policy and Guidance Document, New Mexico".
5. Meet applicable local, state and federal regulations that impact the elements of the CNMP.

These general requirements and related competencies are incorporated as part of the Job Approval process for New Mexico. Competencies for third party vendors will be developed when needed.

Requirements Specific to Elements of a CNMP:

1. **Manure Production, Collection, Storage, Treatment and Transfer –** 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. (See Appendix D for List of conservation practice standards most commonly used when developing a CNMP).

   b. Working knowledge of the information contained in the NRCS Agricultural Waste Management Systems Level 2 Course or its equivalent.

2. **Land Treatment Practices** – This element addresses the land on which manure and wastewater from an animal feeding operation will be applied. The following knowledge and skills are required:

a. Skill in applying appropriate erosion prediction technology.

b. Skill in using site vulnerability assessment tools, including P Index, Leaching Index.

c. Ability to plan and implement conservation practices common to the geographic area.

3. **Nutrient Management –** This element addresses the requirements for land application of all nutrients and organic by-products (e.g. animal manure, wastewater, commercial fertilizers, crop residues, legume credits, irrigation water, etc.) 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, including P Index and Leaching Index.

c. Working knowledge of the information in the NRCS Nutrient Management Course or its equivalent.

d. Skill in developing nutrient management plans in compliance with the NRCS Nutrient Management (590) and, as appropriate, Irrigation Water Management (449) conservation practice standard(s).

CERTIFIED CNMP PLANNER DRAFT CERTIFICATION REQUIREMENTS:

(as stated in NRCS General Manual 180-CPA, NM, 4/01)

For certified Conservation Planner – CNMP, the candidate must take the New Mexico CNMP Training Workshop or obtain a waiver from the NRCS State Resource Conservationist. The candidate must also take the NEDS Conservation Planning Modules 1-10 and Introduction to Water Quality Courses and submit a CNMP for review to the State Resource Conservationist. Recertification will consist of obtaining a minimum of one week of training in a three-year period for the type of certification approved and submitting a CNMP to the State Resource Conservationist for approval in the third year.

These specific requirements and related competencies are incorporated as part of the Job Approval process in New Mexico. Specific requirements and competencies for third party vendors will be developed when needed.

See Appendix F for specific CNMP certification requirements and training courses.

APPENDIX A

COMPREHENSIVE NUTRIENT MANAGEMENT PLANNING PROCESS

Introduction

The CNMP planning process is based on the NRCS, three-phase, nine-step planning process. This is how the three phases and nine steps look from a linear perspective:

Phase I - Collection and Analysis (Understanding the Problems and Opportunities)

1. Identify Problems
2. Determine Objectives
3. Inventory Resources
4. Analyze Resource Data

Phase II - Decision Support (Understanding the Solutions)

5. Formulate Alternatives
6. Evaluate Alternatives
7. Make Decisions

Phase III - Application and Evaluation (Understanding the Results)

8. Implement the Plan
9. Evaluate the Plan

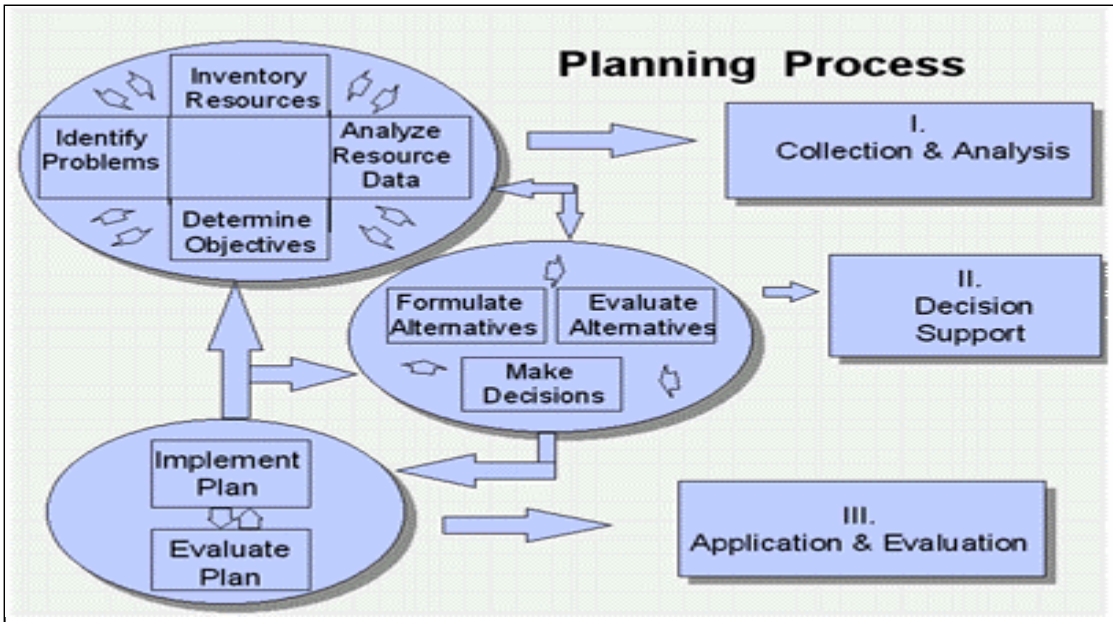


Figure 1

The planning process is straight forward, but not necessarily linear (See Figure 1). It is a cycling process – iterative - there is a need to cycle back. All three phases and all nine steps are vital for successful conservation planning.

- The planning process may start with any of the first three planning steps or planning step nine.
- There may be a need to cycle back to step three (inventory resources), while working on step four (analyze resource data), if more inventory information is needed.
- Step one (identify problems) and step two (determine objectives) will not be finalized until step four (analyze resource data) is completed. The analysis in step four will, at the very least, require a brief review of problem identification and objective determination to make sure they are suitable.
- There also may be a need for the landowner/operator to revise his/her objectives as alternatives are formulated and evaluated.
- Once the plan is developed, there may be a need to go back through the entire planning process and revise the plan, if that becomes necessary, as it is being implemented and evaluated. A revision may be necessary because of a change in objectives, size of the unit, livestock numbers, economics, weather conditions, etc.
- Based on the results of implementation, there also may be a need to look at additional alternatives if the results of plan implementation are not solving the identified problems or meeting the landowner's/operator's objectives.

APPENDIX B

TECHNICAL REFERENCES, HANDBOOKS, AND POLICY DIRECTIVES

Technical References and Handbooks

The Natural Resource Conservation Service has numerous technical references and handbooks that it uses to assist in the development of conservation plans and its various components. Listed below are those technical references and handbooks generally associated with the development of comprehensive nutrient management plans.

United States Department of Agriculture, Natural Resource Conservation Service (NRCS), National Engineering Handbook, Part 651**, "Agricultural Waste Management Field Handbook.**" This handbook is available on the NRCS website at http://www.ncg.nrcs.usda.gov/tech_ref.html or a paper copy of this publication can be purchased from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161, telephone: 1-800-533-6847. Order NTI Publications Numbers: PB230819 and PB 97167753.

United States Department of Agriculture, Natural Resource Conservation Service, **"National Agronomy Manual.**" The National Agronomy Manual establishes policy for agronomy activities and provides technical procedures for uniform implementation of agronomy tools and applications. This manual is presently under revision and is scheduled for release in 2001. The draft version is available on the USDA server in Ft. Worth, Texas at **ftp://ftp.ftw.nrcs.usda.gov/pub/NAM/.**

United States Department of Agriculture, Natural Resource Conservation Service, **"National Planning Procedures Handbook (NPPH)**." The purpose of this handbook is to provide guidance on the planning process the Natural Resources Conservation Service (NRCS) uses to develop, implement and evaluate conservation plans for individuals, and areawide conservation plans or assessments for groups. This handbook is available on the NRCS website at http://policy.nrcs.usda.gov/scripts/lpsiis.dll/EDS/RTFList.html, or from the NRCS Conservation Operations Division, Natural Resources Conservation Service, 12th and Independence SW, Washington, D.C. 20013.

United States Department of Agriculture, Natural Resource Conservation Service, **"Conservation Planning Course**", **"Introduction to Water Quality**",**"Nutrient and Pest Management Considerations in Conservation Planning**", **"Agricultural Waste Management Systems – A Primer", and "Agricultural Waste Management Systems – Level 2".** These courses are available on the NRCS website at http://www.nedc.nrcs.usda.gov/courses/course_listing.htm.

United States Department of Agriculture, Natural Resource Conservation Service, **"Agronomy Technical Notes**." These notes are available on the NRCS website at http://www.ncg.nrcs.usda.gov/tech_notes.html.
United States Department of Agriculture, Natural Resource Conservation Service,

"Soil Quality Information Sheets." These sheets are available on the NRCS website at http://www.ncg.nrcs.usda.gov/tech_notes.html.

United States Department of Agriculture, Natural Resource Conservation Service, **"National Range and Pasture Handbook."** This handbook is available on the NRCS website at http://www.ncg.nrcs.usda.gov/tech_ref.html**.**

Hard copies of available publications can be purchased from:

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA. 22161

Telephone: 1-800-553-6847

Policy Directives

NRCS policy is contained in Natural Resources Conservation Service, **"General Manual."** The index for the entire manual can be found at NRCS website http://policy.nrcs.usda.gov/national/gm/index.htm. Listed below are those policy directives, contained in the **General Manual**, generally associated with the development of comprehensive nutrient management plans.

Natural Resources Conservation Service, "General Manual", Title 450, Technology, Part 401, **Technical Guides**. This part of the General Manual is available at the NRCS website at http://policy.nrcs.usda.gov/national/gm/title450/part401/index.htm**.**

Natural Resources Conservation Service, "General Manual", Title 190, Ecological Sciences, Part 402, **Nutrient Management**. This part of the General Manual is available at the NRCS website at http://www.nhq.nrcs.usda.gov/BCS/nutri/gm-190.html**.**

APPENDIX C:

SUGGESTED FORMAT OF COMPREHENSIVE NUTRIENT MANAGEMENT PLAN

The conservation plan is developed by the landowner/operator for his/her use to record decisions for natural resource protection, conservation, and enhancement.

Decisions and resource information needed during implementation and maintenance of the plan are recorded. The plan narrative and supporting documents provide guidance for implementation and may serve as a basis for compliance with state and federal regulations and/or program funding through federal, state, or local financial support initiatives.

A comprehensive nutrient management plan (CNMP) is to include all land units, on which manure and organic by-products will be generated, handled, or applied, and that the landowner/operator either owns or has decision making authority over.

The following guidance helps to maintain quality and provide appropriate documentation of a plan. The list shows the suggested items to be given to the AFO owner/operator. However, the plan content should be tailored to the meet the AFO owner's/operator's needs. The plan document provided to the producer should be a quality document containing meaningful information to the producer.

The CNMP should include the following sections:

A. Facility Information
B. Safety and Emergency Action Plan
C. Objectives and Resource Concerns
D. Inventory, Analysis and Alternatives
E. Plan Summary of Decisions
F. Job Sheets and Specifications
G. Operation and Maintenance
H. Recordkeeping
I. Permits

Greater detail for section content is included:

A. Facility Information

- Name, address, and phone number(s) of the AFO
- Name of the owner and operator
- Legal description of AFO
- Hydrologic unit code
- AU of the facility
- Total acres available for nutrient application owned or leased by the facility
- Date the CNMP was completed

- Name and Signatures of the Client, Certified Planner – CNMP, Certified Specialists – Manure and Wastewater Handling and Storage, Land Treatment Practices, Nutrient Management.

B. Safety and Emergency Action Plan

- Phone numbers for fire, ambulance, law enforcement, spill recovery, spill reporting, farm personnel
- Recovery equipment - what and where
- Action Plan for fire, personal injury, spills from containment structure, spills during pumping, spills during transport

C. Objectives and Resource Concerns

- Determine and state future goals and objectives of producer; an increase in herd size or the addition of a solid/liquid separator will change the nutrient balance on the facility. If future goals change the balance of the nutrient budgeting within the next five years, complete the comprehensive nutrient management plan for present and future conditions.
- State and address resource concerns on facility and land application sites.
- Consider runoff situation on facility; state final destination of drain ditches and canals, even if runoff from irrigation or storm events does not enter these waterways.
- Include 8-digit hydrologic unit code and stream segment the facility is located by; if stream section is water quality limited (TMDL segment), state the water bodies pollutants of concern.
- All environmental sensitive issues and concerns must be addressed in this section (i.e. surface water, bedrock, rock outcrops, wetlands)

D. Inventory, Analysis and Alternatives

1. Conservation Plan Map
   - Milk barn, holding tank, feed storage
   - Livestock housing and corrals
   - Waste structures, lagoon(s), separator(s), solid storage, ditches, buried or surface pipelines, runoff containment, corral slopes, berms
   - Residences
   - Property lines, if appropriate; boundary lines of planning unit, field boundaries, land use and acres for each land unit, appropriate map symbols and legend
   - Wells and/or well heads
   - Monitoring wells
   - Surface waters, surface/subsurface drains (direction of flow)
   - Title block showing: “Conservation Plan Map”, “Prepared with assistance from ___Name_____”, Name of the conservation district, county and state, map scale, date prepared, North arrow
   - Include a larger scale map showing a 1-mile radius surrounding facility.
2. NM CNMP Inventory Sheet, or equivalent to include:
   a. Name and location of facility
   b. Production information, including number and species of animals, average weight, number of days in system, phases of production, manure volumes; consistency, location, and timing of the manure produced. The production estimates should include future expansion.

c. Roof and/or Runoff Management
d. Management of Dead Animals and Veterinary Wastes
e. Manure Collection, Storage, Treatment, and Transfer
   - Collection - Identify method of collection, location of the collection points, scheduling of the collection, labor requirements, necessary equipment or structural facilities, and impact that collection has on the consistency of the waste. Report information on maintenance and cleaning of the milking parlor, including cow preparation for dairies.
   - Storage - The storage period should be determined by the utilization schedule; the waste management system should identify the storage period; the required storage volume; the type, estimated size, and location of the storage facility; and the impact of the storage on the consistency of the waste.
   - Treatment – include an analysis of the characteristics of the waste before treatment; a determination of the desired characteristics of the waste following treatment; and the selection of the type, estimated size, location.
   - Transfer – include an analysis of the consistency of the waste to be moved, method of transportation, distance between points, frequency and scheduling, and necessary equipment.
f. Manure Utilization – Describe how manure is and will be used, which may include as a source of energy, bedding, animal feed, mulch, organic matter, or plant nutrients.

   (1) Land Application
   - A complete analysis of utilization through land application includes designing the distribution system and selecting necessary equipment.
   - A nutrient management plan is to be developed to determine application rates and volumes; selecting the fields; scheduling applications; and sampling manure, soil, water, and plants.
   - Individual field maps with marked setbacks, buffers, waterways
   - A soil map with appropriate interpretations, such as land capability groupings, woodland suitability groups, pasture and hayland suitability groups, and other interpretive information regarding suitability for specific land uses.
   - Site evaluation
   - Crop rotation
   - Crops and yields
   - Nutrient uptake
   - Expected seasonal application rate and time
   - Estimated land area requirement
   - Nutrient utilization worksheet
   - Manure valuation summary
   - Irrigation system – describe how cropland is irrigated, including liquid waste application. Set times, frequency of irrigation, available water holding capacity and crop management allowable depletion should be covered. Describe any changes to the irrigation system that may be necessary to address resource concerns.
   - Grazing management

   (2) Other Utilization of Manure

   In addition to land application, explore additional ways that manure is being or could be utilized, including composting, methane generation, and feed utilization.

g. Feeding information
   - Describe any measures that are or will be used to alter manure nutrient content through feed management such as phytase feeding, milk urea nitrogen testing.

h. Summary of Recommendations for Alternative Practices

E. Plan Summary of Decisions

- General
- System Description
- Decisionmaker's Responsibilities
- Recorded Decisions and Component Installation Schedule – include the appropriate land unit label, official practice name, brief description of the practice, and schedule of practice application in the proper sequence by calendar year
- Production Function Requirements
- Collection Function Requirements
- Treatment Function Requirements
- Storage Function Requirements
- Transfer Function Requirements
- Utilization Function Requirements
- Contingency Plan
- Public Protection
- Closure Plan
- Decisionmaker acknowledgement

F. Job sheets and Specifications

- Available job sheets and specifications applicable to the producer's specific planned practices.
- Worksheets developed with producer, such as resource impact summaries, forage inventories, erosion estimates, and cost estimates.

G. Operation and Maintenance

1. Reviews and Plan Modifications
   - Dates of Review, including person performing the review and recommendations that resulted from the review
   - Suggested modifications
   - A revision may be necessary because of a change in objectives, size of the unit, livestock numbers, economics, weather conditions, etc.
   - Based on the results of implementation, there also may be a need to look at additional alternatives if the results of plan implementation are not solving the identified problems or meeting the landowner's/operator's objectives.
2. Operation and Maintenance Procedures
   - List of maintenance items to be done periodically to maintain system.

I. Recordkeeping

- If a producer is to safely manage and assess his/her CNMP, it is critical he/she maintain a record of activities and the functionality of the system. A recordkeeping plan should be implemented that addresses key elements of the CNMP to aid in the proper application and provide for assessment documentation.

- Where the CNMP is part of a permitting or other regulatory program, it is the responsibility of the producer to maintain any required documentation, including plans and implementation records, and make them available to the regulatory organization, if required.
  - 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.
    - Date of application.
    - Application method and equipment used.
  - Crops planted and planting and/or harvesting dates, by field
  - Manure, lagoon sampling results
  - Records that address manure and wastewater storage containment structures:
    - Dates of emptying, level before emptying, and level after emptying, and discharge or overflow events, including level before and after event.
  - Transfer of manure off-site or to third parties:
    - Manure nutrient content (N, P, K)
    - Amount of manure transferred.
    - Date of transfer.
    - Recipient of manure (name, address, phone)
  - Available maps, sketches and designs resulting from the planning process that will be useful to the producer in implementing the plan
  - Environmental evaluations
  - Monitoring well results
  - Activities associated with emergency spill response plan.
  - Documentation of soils/geologic investigation.
  - As-built plans available onsite.
  - 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.
    - Actions taken as a result of the review.
  - Records of maintenance performed associated with operation and maintenance plans.
  - Changes made in CNMP.

J. Permits

- NPDES CAFO
- Groundwater Discharge
- Inspection records
- Operator/manager certification

APPENDIX D

CONSERVATION PRACTICE STANDARDS

Natural Resources Conservation Service (NRCS) conservation practice standards provide guidance for applying technology on the land, and set the minimum level for acceptable application of the technology.

NRCS issues national conservation practice standards in its National Handbook of Conservation Practices (NHCP). National standards for each practice are available at the NRCS website http://www.ncg.nrcs.usda.gov/nhcp_2.html. State Conservationists determine which national standards will be used in his/her state. The National and State Standards can be accessed at the NM NRCS State Office website: http://www.nm.nrcs.usda.gov. Click on Data and Technology, Technical References, Field Office Technical Guide, Section IV.

State Conservationists that choose to use national standards, without changes, adapt them for use in their state and issue them as state conservation practice standards. State Conservationists add the technical detail needed to effectively use the standards at the field office level. Also, State Conservationists can make their conservation practice standards more restrictive, but not less restrictive. State conservation practice standards are contained in Section IV of the Field Office Technical Guide.

Following is a partial listing of the most commonly considered conservation practice standards that may be used when developing a comprehensive nutrient management plan (CNMP):

Practice Code	Practice Name
365	Anaerobic Digester- Ambient Temperature
366	Anaerobic Digester – Controlled Temperature
370	Atmospheric Resource Quality Management
360	Closure of Waste Impoundments
317	Composting Facility
328	Conservation Crop Rotation
340	Cover Crop
589A	Cross Wind Ridges
589B	Cross Wind Strip Cropping
589C	Cross Wind Trap Strips
362	Diversion
554	Drainage Water Management
592	Feed Management
382	Fence
393	Filter Strip
410	Grade Stabilization Structure
412	Grassed Waterway
603	Herbaceous Wind Barriers
464	Irrigation Land Leveling
430	Irrigation Water Conveyance, Pipeline
449	Irrigation Water Management
634	Manure Transfer
353	Monitoring Wells
590	Nutrient Management
595	Pest Management
516	Pipeline
521A	Pond Sealing or Lining – Flexible Membrane
521C	Pond Sealing or Lining – Bentonite Sealant
329A	Residue Management, No-till and Strip Till
329B	Residue Management, Mulch Till
344	Residue Management, Seasonal
391A	Riparian Forest Buffer
558	Roof Runoff Structure
587	Structure for Water Control
313	Waste Storage Facility
359	Waste Treatment Lagoon
633	Waste Utilization
635	Wastewater Treatment Strip
351	Well Decommissioning
380	Windbreak/Shelterbelt Establishment

APPENDIX E

FIELD OFFICE TECHNICAL GUIDE

The Natural Resources Conservation Service (NRCS) Field Office Technical Guide (FOTG) is an essential tool for resource planning. The FOTG contains five Sections:

I. General Resource References –References, maps, cost lists, typical crop budgets, and other information for use in understanding the field office working area, or in making decisions about resource use and resource management.

II. Soil and Site Information – Soils are described and interpreted to help make decisions about land use and management. In most cases, this will be an electronic database.

III. Resource Management Systems – Guidance for developing conservation management systems. A description of the resource considerations and their acceptable levels of quality criteria are included in this section.

IV. Practice Standards and Specifications – Contains standards and specifications for conservation practices used in the field office. Conservation practice standards contain minimum quality criteria for designing and planning each practice; specifications describe requirements necessary to install a practice.

V. Conservation Effects – Contains Conservation Practices Physical Effects matrices that outline the impact of practices on various aspects of the five major resources – soil, air, water, plants, and animals.

The FOTG is a document that is being updated continually to reflect changes in technology, resource information, and agency policy. The FOTG contains information that is unique to states and local field offices within states.

APPENDIX F

NM CERTIFICATION REQUIREMENTS AND TRAINING FOR CNMP

Certification Requirements for NRCS Certified Conservation Planner - CNMP and CNMP Specialist

Certified Conservation Planner – CNMP

a. NEDC Conservation Planning – All Modules
b. 1 CNMP
c. Renew every 3 years (1 CNMP and 3 day training course)
d. NM CNMP Workshop
e. NEDC Introduction to Water Quality Course

Certified CNMP Specialist (Job Approval Authority) – General Requirements

a. NEDC Conservation Planning Modules 1-5
b. NEDC Introduction to Water Quality Course
c. NEDC Agricultural Waste Management Systems Level I Course
d. Knowledge of FOTG **(NM CNMP Workshop)**
e. Understanding of the CNMP Technical Guidance **(NM CNMP Workshop)**
f. Knowledge of federal, state, tribal, and local laws and regulations **(NM CNMP Workshop)**

Certified CNMP Specialist (Job Approval Authority) – Specific Element Requirements

(For certification in each specific element below, a specialist must also complete the general requirements)

1. **Manure and Wastewater Handling and Storage (MHS)**

a. Knowledge adequate to plan conservation practices typically used to address this element, including Animal Mortality Facility (316), Closure of Waste Impoundments (360), Composting Facility (317), Covered Anaerobic Digester (365), Manure Transfer (634), Pond Sealing or Lining (521), Roof Runoff Management (558), Waste Storage Facility (313), Waste Treatment Lagoon (359), Waste Utilization (633), and Wastewater Treatment Strip (635) - **(Planning Job Approval for each practice)**.

b. NEDC Agricultural Waste Management Systems Level II Course.

2. **Land Treatment (LT)**

a. Knowledge adequate to plan conservation practices typically used to address this element, including Conservation Crop Rotation (328), Cover Crop (340), Cross Wind Ridges (589a), Cross Wind Strip Cropping (589b), Cross Wind Trap Strips (589c), Diversion (362), Fence (382), Filter Strip (393), Grade Stabilization Structure (410), Grassed Waterway (412), Irrigation Land Leveling (464), Irrigation Water Management (449), Residue Management (329), Riparian Forest Buffer (391a), Tree and Shrub Establishment (612), and Windbreak/Shelterbelt Establishment (380) - **(Planning Job Approval for each practice)**
b. Application of Approved Erosion Prediction Technology - **(NM CNMP Workshop)**
c. Site Vulnerability Tools - **(NM Nutrient Management Module 7 Course)**

3. **Nutrient Management 590 (NM)**

a. Knowledge adequate to plan and implement conservation practice 590 - **(Job Approval)**
b. NEDC Nutrient Management (Modules 1-6) Course
c. NM Nutrient Management (Module 7) Course

4. **Feed Management (optional component)**

a. Knowledge of various feeding technologies and feeding techniques described in the NRCS conservation practice standard for feed management (Code 592).
b. Acquire 15 hours of training in feed management.
c. Submit plan component for review.

5. **Recordkeeping**

No NRCS practice or certification.

6. **Other Utilization**

No NRCS certification.

NM Certification Requirements for Technical Service Provider Certified Conservation Planner - CNMP and Certified CNMP Specialist

Certified Conservation Planner – CNMP

a. NRCS National Employee Development Center (NEDC) Conservation Planning Modules 1-5

b. NM CNMP Workshop plus 1 CNMP Plan (must include elements 1,2,3,5)

c. NEDC Introduction to Water Quality Course

d. Renew every 3 years (1 CNMP Plan)

Certified CNMP Specialist - General Requirements

a. NEDC Conservation Planning Modules 1-5

b. NEDC Introduction to Water Quality Course

c. NEDC Agricultural Waste Management Systems Level I Course

d. Knowledge of Field Office Technical Guide **(NM CNMP Workshop)**

e. Understanding of the CNMP Technical Guidance **(NM CNMP Workshop)**.

f. Knowledge of federal, state, tribal, and local laws and regulations **(NM CNMP Workshop).**

Certified CNMP Specialist - Specific Element Requirements

(For certification in each specific element below, a specialist must also complete the general requirements)

1. **Manure and Wastewater Handling and Storage (MHS)**

a. Knowledge adequate to plan conservation practices typically used to address this element, including Animal Mortality Facility (316), Closure of Waste Impoundments (360), Composting Facility (317), Covered Anaerobic Digester (365), Manure Transfer (634), Pond Sealing or Lining (521), Roof Runoff Management (558), Waste Storage Facility (313), Waste Treatment Lagoon (359), Waste Utilization (633), and Wastewater Treatment Strip (635). **(Plan component will be submitted for review by NRCS State Resource Conservationist).**

b. NEDC Agricultural Waste Management Systems Level II Course.

2. **Land Treatment (LT)**

a. Knowledge adequate to plan conservation practices typically used to address this element, including Conservation Crop Rotation (328), Cover Crop (340), Cross Wind Ridges (589a), Cross Wind Strip Cropping (589b), Cross Wind Trap Strips (589c), Diversion (362), Fence (382), Filter Strip (393), Grade Stabilization Structure (410), Grassed Waterway (412), Irrigation Land Leveling (464), Irrigation Water Management (449), Residue Management (329), Riparian Forest Buffer (391a), Tree and Shrub Establishment (612), and Windbreak/Shelterbelt Establishment (380). **(Plan component will be submitted for review by NRCS State Resource Conservationist).**

b. Application of Approved Erosion Prediction Technology - **(NM CNMP Workshop)**

c. Site Vulnerability Tools - **(NM Nutrient Management Module 7 Training)**

d. Certified Crop Advisor Certification in NM

3. **Nutrient Management 590 (NM)**

a. Knowledge adequate to plan and implement conservation practice 590

b. NEDC Nutrient Management (Modules1-6) Course

c. NM Nutrient Management (Module 7) Course **(includes submittal of plan component for review).**

d. Certified Crop Advisor Certification in NM

4. **Feed Management (optional component)**

a. Knowledge of various feeding technologies and feeding techniques described in the NRCS conservation practice standard for feed management (Code 592).

b. Acquire 15 hours of training in feed management.

c. Submit plan component for review.

5. **Recordkeeping**

No NRCS certification.

6. **Other Utilization**

No NRCS certification.

Training Courses for CNMP Certification

A. NRCS National Employee Development Center (NEDC) Courses:

Course Registration:

a) **NEDC Webpage: HTTP://WWW.NEDC.NRCS.USDA.GOV/.** click on course catalog and course listing.

1.) **Conservation Planning Modules 1-5 –** no prerequisites. It includes a web-based exam. Please go to the following URL to access the training and exam: **http:**//www.nedc.nrcs.usda.gov/catalog/consplan.html. When you complete the exam, your scores will automatically be stored in a database.

2.) **Introduction to Water Quality –** no prerequisites. This training program creates an awareness of NRCS Water Quality policy, and teaches principles and how to apply them in daily NRCS activities at the field, farm, and watershed scales. The course utilizes video and student workbook for the self-study delivery. A score of 80% or above on the on-line Pretest qualifies for a Certificate of Competency. Otherwise, course materials will be sent to student for completion within 3 months. The training program requires approximately 20 hours of concentrated study to complete. A score of 70% or above on the on-line Posttest qualifies for a Certificate of Completion.

3.) **Nutrient and Pest Management Considerations in Conservation Planning** – prerequisite is Introduction to Water Quality Course. This training course introduces NRCS' mission in the nutrient and pest management arena and how it relates to the Resource Management System (RMS) planning process. It provides the participant with a basic understanding of the science of nutrient and pest management, as well as environmental concerns associated with the use of nutrients and pest management measures, including environmental risk, and the processes that affect the fate and transport of nutrients and pesticides in the environment. The training program is divided into two tracks: Track 1 – Nutrient Management and Track 2 – Pest Management. Each track will be offered as individual components of the overall course. The course contains a video and student workbook for the self-study delivery. This portion requires approximately 40 hours of concentrated study to complete. After successful completion of the self-paced Modules 1-6, participants will attend an in-state facilitated session (Module 7) using exercises and assessment tools to reinforce and apply important concepts. Contact Linda Scheffe, NRCS, 505/761-4448, Linda.Scheffe@nm.usda.gov to register for an in-state facilitated session. The participant will prepare a nutrient and/or pest management component of an RMS plan to complete the training.

4.) **Agricultural Waste Management Systems** – **Level I –** no prerequisites. This training provides an overview of agricultural waste management systems. It covers background, safety and hazards, planning, and functions of agricultural waste management systems. The course is comprised of a self-paced booklet with an accompanying video and requires approximately 1 hour to complete. This course may be requested by sending an e-mail with the information shown below to gspiller@ftw.nrcs.usda.gov.

- Name

- Job title
- Address
- Telephone
- E-mail address
- Supervisor's name

5.) **Agricultural Waste Management Systems – Level 2 –** Prerequisites– Agricultural Waste Management Systems – Primer 1 and Introduction to Water Quality Courses (the Nutrient and Pest Management Considerations in Conservation Planning Course is also highly recommended). This course provides training on planning and designing agricultural waste management systems with an emphasis on systems for livestock and poultry operations. It provides guidance in developing an agricultural waste management system that manages the waste from its production through its utilization. The Agricultural Waste Management Field Handbook serves as the textbook and reference. The delivery of the training is a self-paced computer based training, packaged as a CD and a workbook. Participants will have 3 months from the day they register and complete the Pretest until they must take the Posttest. The training program requires approximately 32 hours of concentrated study to complete.

B. In-State CNMP Courses:

1.) New Mexico CNMP Workshop

Course Registration: Contact Linda Scheffe, NRCS, 505/761-4448, Linda.Scheffe@nm.nrcs.usda.gov to register for next session. This course will be held annually or as needed.

Summary: Prerequisite: NEDC Introduction to Water Quality Course and NEDC Conservation Planning Course (Modules 1-5). This interagency course covers the major components associated with the Comprehensive Nutrient Management Plan in partial fulfillment of the certification requirements for Certified Conservation Planner – CNMP and CNMP Specialist. The duration of the course is 3 days, covering policy, procedures and technical standards for planning, implementing and evaluating the CNMP component for an animal feeding operation of a Resource Management System. Upon completion of the course, participants will prepare a comprehensive nutrient management component of an RMS plan to complete the training.

APPENDIX G

PROCESS FOR PLANNING AND DESIGNING AGRICULTURAL WASTE SYSTEMS

A. Producer applies for EQIP or requests technical assistance for animal feeding operation.

1. Applicants must provide compliance documentation for applicable state, local and federal permits by the end of the EQIP application evaluation period (NMED-GWQB Permit and EPA CAFO NPDES Permit, if applicable).

2. If an EQIP plan of operations includes an animal waste storage or treatment facility, the participant must provide for the development and implementation of a comprehensive nutrient management plan.

3. It is highly recommended that CNMPs be written and completed prior to contract signing. Advantages include accurate contract information and higher priority for EQIP funding.

4. When a CNMP and/or practice designs can not be completed prior to contract signing, use the "Initial Planning of Liners, AFO/CAFO Fact Sheet 2" and the New Mexico Dairy Pond Sizing Software for estimating the approximate area of synthetic lining that may be required and the preliminary pond requirements. For EQIP cost docket, use final pond dimensions: total volume in ac. ft. for waste storage facility (this already includes cost of liner, but does not include fencing cost). See attached diagram.

5. CNMPs must be developed and approved by one of the following certified planners:
   - NRCS CNMP planners (CTA)
   - Client-hired TSP from the TechReg website.

6. The EQIP contract practice is to be based on existing resource needs, and will not exceed the existing discharge permit. From the New Mexico Dairy Pond Sizing Software, Planning Data Sheet, take sum of washwater and liquid needed per month (plus alley flush liquids where used), divide by 30 for daily liquid waste; this sum should be equal to or less than the allowable discharge in the facility's current GWQB discharge permit. See attached diagram. Contracts will not fund future expansion projects.

7. NRCS planners should always provide planning assistance for future expansion projects, within limitations of the existing permit. EQIP contract funds, however, will cover only the existing resource needs.

8. Contract modification involving increased FA obligations cannot be approved without proper justification as per Conservation Plan Contract regulations.

NM-POND SIZE DETERMINATION for Ponds with Field application

USDA Natural Resources Conservation Service — Version 2.8 (6/8/06) — Date: 2/13/2006

Dairy Name:	Breakaway	Dairy Manager:	0
Location:	Roswell	Planner:	Tom Collins
Pond Name/Num.:	RO Pond	Type of Pond:	120-day Storage

Estimate Number of Years Before Cleaning Pond: 5 years

Pond designed for:
- Milk Center/Flush Volume ONLY and field applicatbn from pond: ☐
- Milk Center/Flush AND Storm Lot Runoff with field applicatbn from pond: ☑

SOLIDS SEPARATION *(adjustment to total storage requirements)*

Solids Produced (ac in/yr from Pond Vol sheet): 4.1

Type of Separators	% Reduced (default value)	% Adjust. (+/-)	Separation Value (%)	Storage Need (ac in)
Static Incline Screen (36 mesh)	15%	25%	19%	3.4

Total Volume of Solids: 3.4 ac in/yr 0.3 ac ft/yr

POND STORAGE CAPACITY

Surface Area:	2.8 ac.
POND Volume (60 day Storage w/2 mo. Solids, or 120 day Storage w/4 mo. Solids):	11.8 ac. ft.
STORM Volume (25 year-24 hour Rainfall over Pond):	1.2 ac. ft.
STORM Volume (25 year-24 hrs Storm Runoff from Lot):	6.6 ac. ft.
Sludge Storage Volume (based on yrs before cleaning):	1.4 ac. ft.
Total Storage Required:	21.0 ac. ft.

WASTE WATER STORAGE REQUIREMENT

Required Freeboard Depth (ft)	2.0		
POND Length (at evaporation surface) (ft)	570	349	(ft) Estimated Length
SIDE SLOPE (inside) (ft:ft)	3.0 :1		GWQB requires ≥ 3:1
POND Width (at evaporation surface) (ft)	214	349	(ft) Estimated Width
POND Depth (for required storage) (ft)	4.3		Adjust POND Depth until pond vol balances.
POND Volume (for required storage) (ac-ft)	12.04		11.8 ac-ft = Required for Storage Vol.

The POND Vol. is OK or depth may be decreased.

Since evaporation from the pond surface varies with depth, the required or average "evaporation surface" is located halfway between the bottom and top of the waste water storage volume (Pond Volume).

STORAGE OF 25 year-24 hour STORM

SURFACE AREA (at top of required storage) (ac)	3.0	
STORM Length (at top of required storage) (ft)	583	
STORM Width (at top of required storage) (ft)	227	7.8 ac-ft = Required storage for 25 yr storm
STORM Depth (for storage of 25 yr storm) (ft)	2.5	The STORM Vol. is OK or depth can be decreased.
STORM Volume (for 25 yr storm storage) (ac-ft)	7.9	

STORAGE OF SLUDGE

SLUDGE AREA (bottom of required storage) (ac)	2.6	
SLUDGE Length (bottom of required storage) (ft)	557.1	
SLUDGE Width (bottom of required storage) (ft)	201.1	1.40 ac-ft = Required storage for sludge storage
SLUDGE Depth (for storage of sludge) (ft)	0.6	The SLUDGE Vol. is OK or depth can be decreased.
SLUDGE Volume (designed storage) (ac-ft)	1.5	

This is the estimated Ac. Ft. of pond required.

This amount should be used for planning and contract amounts.

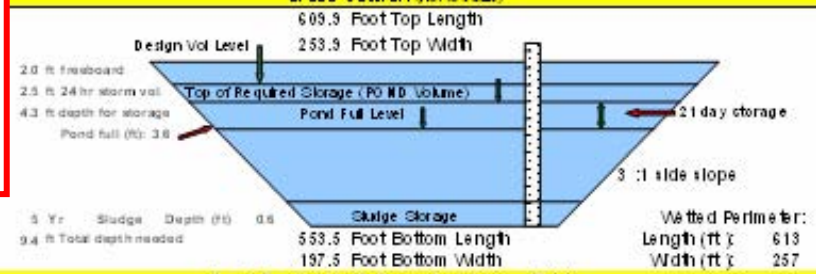
FINAL POND DIMENSIONS

TOTAL Pond Depth (ft)	9.4	Includes storage, runoff, freeboard and sludge.	
TOTAL Pond Length (ft)	610		
TOTAL Pond Width (ft)	254	These quantities assumes a level existing ground surface.	
TOTAL Surface Area (ac)	2.6		
TOTAL VOLUME (includes freeboard and sludge):	28.4 Ac Ft	340.3 Ac In	
	9,240,496 Gal	1,235,454 Cu Ft	
	45,757.6 Cu Yd		

DEPTH OF 21 DAY STORAGE WITHIN THE TOTAL STORAGE VOLUME

Required 21-day Storage (ac-ft)	2.1	
Depth of 21-day storage (ft)	0.7	Increment 21-day depth until volumes balance.
Calculated 21-day Storage (ac-ft)	2.1	Depth is OK, or depth may be decreased.

Cross Section (not to scale)



Pond Depth (Staff Gauge) -- Volume Table

Depth	Ac Ft	Ac In	Gallons	Depth	Ac Ft	Ac In	Gallons
6.0	17.0	203.7	5,531,958				
5.5	15.4	184.9	5,021,777				
5.0	13.9	166.5	4,520,763				
4.5	12.4	148.4	4,028,848				
4.0	10.9	130.6	3,545,967				
3.5	9.4	113.1	3,072,050				
3.0	8.0	96.0	2,607,031	9.0	27.0	323.7	8,789,323
2.5	6.6	79.2	2,150,842	8.5	25.2	302.8	8,222,735
2.0	5.2	62.7	1,703,417	8.0	23.5	282.3	7,665,699
1.5	3.9	46.6	1,264,687	7.5	21.8	262.1	7,118,177
1.0	2.6	30.7	834,586	7.0	20.2	242.3	6,580,091
0.5	1.3	15.2	413,046	6.5	18.6	222.9	6,051,373

Lining Area

Lining Area = 18,630 yds² OR 167,669 Ft²

System Planning Notes (Explain pond arrangements or Waste flow characteristics)

NM-DAIRY PLANNING DATA SHEET

USDA Natural Resource Conservation Service Version 2.6 (5/8/06)

Dairy Name:	Super Cow Dairy	**Dairy Manager:**	Joe Holstein	Flush System used?	No
Location:	Artesia, NM	**Planner:**	MAS	Date:	2/13/06

DAIRY DATA (milking center and flush system)

Number of cows - Milking:	2,000	**Dry:** 100	**1000 lbs units (AU) Milking**
Average weight of cows:	1,400	lbs	2800
% waste from the milking center:	15%	percent (%), 15% is typical	
Wash water used in milking center:	13	gal/day/cow	**This dairy is a large CAFO.**
Number of months of storage needed:	2	Month Storage	
Flush water added:		Gal/Day	

Assumptions: **1.** A 1000 lbs cow produces 80 lbs of manure daily. **2.** 88% of manure is liquid. **3.** 1 ton manure = 34 Cu Ft **4.** 134.5 Cu. Yds.= 1 ac in. **5.** 27150 gallons = 1 ac in. **6.** 8.33 lbs. liquid = 1gal liquid

DAIRY DATA (Flush System)

Cow Type	Num. of Cows	Wt per Animal lbs/animal	% Time on system	Manure[1] lbs/day/1000lbs	Animal Units #xWt/1000	Manure/Day lbs/day
Number of milking cows:	2,000	0		80	0	0
Number of dry cows:	100	0		82	0	0
Number of heifers:				85	0	0
Number of other type cows:				85	0	0
Total:	2,100	head			**Total:**	**0** lbs/day

Flush water used per cow: 0.0 gal/cow/day *(total gal per day/number of cows using the system)*

[1] *Values from the AWMFH 4/92*

PROCESS WASTE CALCULATION

Milking Center Washwater (water storage needed/Mo)

Liquid Vol = milk center (gal/day/cow) x cows in system (# of cows) x days of storage (days) = Gal/Mo

Q= 13 gal/day/cow X 2000 cows X 30 days = **780,000 Gal./Mo**

(Gal/27150) OR = **28.7 ac. in.**

Milking Center Manure Production (liquid storage needed/Mo)

Liquid Vol = AU (#) X manure (lbs/day) X % liquid (88%) X % time (%) X 30 (days) = Lbs/Mo

Q = 2,800 AU X 80.0 lbs/day X 88% X 15% X 30 days 887,040 Lbs/Mo.

Liquid storage needed = liquid (lbs/Mo) / 8.33 lbs/Gal = Gal/Mo

887,040 (lbs/Mo) / (8.33 lbs/gal) = **106,487 Gal/Mo**

(Gal/27150) OR = **3.9 ac. in./Mo**

Milking Center Manure Production (solid storage needed/Mo)

Solids Storage = 1000 lbs units X manure (lbs/day) X % solids (12%) X storage (30days) X barn time (%) = Lbs/Mo

Vol = 2800 AU X 80 lbs/day X 12% X 30 X 15% **120,960 lbs/Mo**

(lbs/mo)/2000 lbs/ton) **60.5 tons/mo.** (cu. ft.) / (27 cu ft/cu yd) **77 cu. yds./Mo**

(tons/Mo) X 34.5 cu. ft./ton **2087 cu ft/mo.** (cu. yds.) / (134.5 cu yds/ac in) **0.57 ac. in./Mo**

Alley Flush Manure Production (liquid storage needed/Mo)

Liquid Vol = Manure weight (lbs/day) x percent liquid (0.88) x storage (30days) = Lbs/Mo

Q = 0 (lbs/day) X 88% X 30 days = 0 Lbs/Mo

Liquid Vol = (cow liquid (lbs) / 8.33 lbs/gal) + (added flush water X 30days) = gal. storage need

0 lbs/mo. / 8.33 lbs/gal + (0 gal/day X 30) = **0 Gal/Mo**

(gal/27150) OR = **0.0 ac. in./Mo**

Alley Flush Manure Production (solid storage needed/Mo)

Solid Vol = Manure weight (lbs/day) x percent solid (0.88) x storage (30days) = Lbs/Mo

Q = 0 (lbs/day) X 12% X 30 days = 0 Lbs/Mo

Solid Vol = liquid (lbs) / 8.33 lbs/gal = gal. storage need

0 lbs/Mo / 8.33 lbs/ga = **0 Gal/Mo**

(lbs/mo)/2000 lbs/ton) **0.0 tons/mo.** (cu. ft.) / (27 cu ft/cu yd) **0 cu. yds./Mo**

(tons/mo) X 34.5 cu. ft./ton **0 cu ft/mo.** (cu. yds.) / (134.5 cu yds/ac in) **0.00 ac. in./Mo**

Take sum of washwater and liquid (plus alley flush liquid, where used), divide by 30 for daily liquid waste; this should be equal to or less than the allow-able discharge in the facility's current GWQB discharge permit.

B. Development of Comprehensive Nutrient Management Plan (Planning materials on NM USDA-NRCS website: http://www.nm.nrcs.usda.gov/technical/water/nmafo.html)

1. A certified CNMP Planner and certified CNMP Specialists for New Mexico conduct on-site visit (s) with the producer. Interdisciplinary (including engineering specialist and planner) and interagency (including consultant, permit writer) coordination is recommended early on in the process. Complete the following:

    a. Identify existing and potential resource issues in the planning area.
    b. Obtain copies of soil test, manure, effluent, irrigation water, monitoring well, and applicable analyses. Document cropping, tillage, nutrient and pest management histories. Compile soils information.
    c. Determine runoff area and direction as well as waste stream parameters, locations of structures, fields, monitoring wells, irrigation wells, and other applicable sites for map and plan development.
    d. Obtain other necessary information for filling out inventory checklist.
    e. Photo document where applicable with producer's consent.
    f. Obtain copies of applicable permits if these have not been provided already for EQIP contract.

2. Complete conservation planning for the animal feeding operation. Work with the producer to identify and select alternatives that address the identified resource concerns.

    a. Complete worksheets, including Dairy Pond Sizing Software, Leaching Index, Phosphorus Index, Wind Erosion Equation, RUSLE2, to determine pond size and ensure quality criteria has been met for resource concerns for planned resource management system.
    b. Complete the CPA-052 form – Environmental Assessment and Resource Inventory Checklist, and any necessary consultation forms.
    c. Select conservation practices to address resource concerns and landowner objectives.
    d. Develop conservation plan and contract (if cost shared).
    e. Complete job sheets for each planned conservation practices included in conservation plan (cropland minimum – Nutrient Management, Pest Management (if applicable), Irrigation Water Management, Conservation Crop Rotation; headquarters typical– Pond Lining, Waste Storage Facility, Manure Transfer)

3. Complete development of Comprehensive Nutrient Management Plan (Checklist for Completed CNMP). Complete and assemble the plan in a 3-ring notebook or binder with tabs that separate all CNMP sections: Facility Information; Safety and Emergency Action Plan; Objectives and Resource Concerns; Inventory, Analysis, and Alternatives; Plan Summary of Decisions, Job Sheets; Operation and Maintenance; Recordkeeping; Permits. Review

with producer at all stages. Obtain signatures of producer, Certified Planner, Certified Specialists for Manure and Wastewater Handling and Storage, Nutrient Management, and Land Treatment.

4. Clients should revise the CNMP as operation or discharge permit changes occur.

5. The producer must be informed that in order to avoid needing a dam safety permit from the New Mexico Office of State Engineer Dam Safety Bureau, the finished design of the waste storage facility will be significantly buried into existing ground surface. By rule of thumb, the majority of the dairies with a herd of approximately 2000 head, the berm will be 2 ft or less above the existing ground. This will avoid the 10/10 rule (greater than or equal to 10 ft. higher than ground level or greater than or equal to 10 ac ft presently requires a dam safety permit).

C. Designing Agricultural Waste Management Structures

1. The process begins with a request for preparing a design. A completed Form NM-ENG-252 is preferable, but a memorandum is acceptable. The following is part of the "Checklist for Completed Comprehensive Nutrient Management Plan:"

Documentation for Design Phase:

a. Items to be Forwarded to Designer:

- ❑ Include available maps, sketches, and preliminary designs resulting from the planning process that may be useful to the engineer in the design of practices.
- ❑ If a land survey was completed, provide a hard copy and an electronic copy of raw survey data. The coordinates of benchmarks, well corners, hydrant bonnets, concrete slabs, separators, and other permanent elements are to be reported. Coordinates should be latitude/longitude, UTM, or state plane coordinates. If a local coordinate system was used (such as 5,000N and 10,000E), the benchmarks used must be in the local coordinate system AND if possible, locate the benchmarks using a survey grade GPS and report the latitude/longitude, UTM, or state plane coordinates. Identify the vertical datum used for surveys.
- ❑ Provide a definition of all abbreviations used for survey (point code terminology such as GRD, TOPLAG, FNC, *et cetera*), features on sketches or drawings (such as WRL, CSL, MW, *et cetera*), and text.
- ❑ If a land survey was not conducted, sketch the proposed improvements (such as a waste storage pond, a storm runoff pond, *et cetera*) with measurements identifying the distance from the corners of the proposed work to easily located permanent structures. The measurements could be achieved using a tape, chain, electronic device, *et cetera*.
- ❑ Provide electronic versions of maps using ArcMAP or AutoCAD if possible. The use of AutoCAD is preferable.
- ❑ Identify all known or supposed utilities -- public or private -- in all areas where improvements may be installed.
- ❑ Provide documentation of soils/geologic information, if any is available.
- ❑ A geotechnical investigation of the sites for all ponds will be necessary during the design effort. If the landowner is currently using the area to grow crops, verify that the driller/backhoe operator has permission to enter the area and that crops may be lost. The driller/backhoe operator must have a utility location service at least 48 hours prior to the work; otherwise, the work will not be done. If the investigation has to be rescheduled, a project delay will occur.

b. Items to be Sent to the Planner after the Design has been Approved:

- ❑ Construction Drawings
- ❑ Construction Specifications
- ❑ Design Engineer's Report
- ❑ Construction Practice Job Sheets

2. The designer then checks to determine if sufficient data has been provided to initiate the design.

3. The following checklist has been found to be useful:

CHECKLISTS FOR THE DESIGN OF AG-WASTE STRUCTURES

I. IDENTIFICATION	(Information obtained by CNMP and/or NM-ENG-252)
A. Client	
B. Farm/Ranch	
C. Tract	
D. Farm Number	
E. Field Number	
F. County	
G. Contract Number	
H. Drawing Number	
I. NMED DP Number	
J. Location	

II. REVIEW OF INITIAL DATA (Date Initial Data Rec'd.:	Yes	No	
A. Comprehensive Nutrient Management Plan prepared			
B. Facility Information Data complete			
C. Signatures			
1. Certified Planner			
2. Certified Specialist - Manure & Wastewater Handling & Storage			
3. Certified Specialist - Land Treatment Practices			
4. Certified Specialist - Nutrient Management			
5. Client			
D. Conservation Plan (AD-1155E or equivalent)			
E. Environment Assessment checklist (CPA-052) complete			
F. Survey			
1. Permanent and Temporary benchmarks identified with: (Note that at least two permanent **and** two temporary benchmarks are needed.)			
a) local grid system			
b) latitude/longitude			
c) UTM			
d) other			
e) elevation			
f) datum			
g) map projection			
2. Topography in project area completed with "ground truthing"			
3. Electronic survey data submitted			
4. Monitoring wells surveyed			
5. Existing utilities surveyed			
6. Existing structures in immediate construction area surveyed			

G. General Plan			
1. Existing structures identified			
2. Approximate location of utilities			
3. General area of proposed improvements (ponds, et cetera)			
4. Electronic version of general plan submitted			
H. Site Investigation/Geotechnical Evaluation			
1. Subsurface investigation completed			
2. Index properties of the subsurface materials identified			
3. Percent organic content of the foundation materials			
4. Groundwater elevation identified			
I. Pond Type			
1. Milking Parlor Only			
2. Storm Runoff Pond Only			
3. Combined Pond			
4. 100% Evaporative Pond			
5. Clay liner proposed in the CNMP			
6. If yes, has owner been advised of current NRCS policy			
7. Current pond sizing software used			

Initial Review Completed by: _____ _____
(name) (date)

4. The District Conservationist is then advised if certain elements are missing or if the materials are complete and preliminary design may begin. The following identifies the major items to be performed associated with a preliminary design:

III. PRELIMINARY DESIGN	Complete	N/A
A. Review hydrologic design		
1. Revise hydrology		
B. Review available geotechnical data		
1. Request additional data if necessary for:		
a) Index properties of subsurface materials		
b) Percent organic content of the foundation materials		
c) Drill at least 5 holes for each pond (4 corners, 1 center)		
d) Drill holes to be at least 5 feet below pond invert		
e) As directed by Geologist, combine samples for testing (Proctor)		
f) Complete site investigation for foundations for new structures		
C. Re-run pond sizing software		
D. Obtain more complete topographical survey data		
E. Obtain more complete utility and/or physical feature data		
F. Establish pond invert		
G. Ensure pond dimensions and elevations “fit” within the given topography		
H. Determine if the pond is a regulatory dam		
1. If yes, immediately discuss with District Conservationist before continuing. (Discuss if lowering the pond is an acceptable alternative to the CNMP.)		
2. If still yes, use checklist prepared by Dam Safety Bureau		
I. Meet with local NRCS personnel and owner		
1. Meeting Date		
2. Review preliminary design		
3. Verify what components are to be part of final design		
4. Verify what components are not to be part of the construction drawings		
J. Modify existing standard details to comply with this project		

5. Complete the draft of the final design. Very often, the checklist above and the checklist below are completed simultaneously.

IV. DRAFT OF FINAL DESIGN	Complete	N/A
A. Construction drawings		
1. Maps		
2. Establish construction baseline		
3. Correlate improvements to construction baseline		
4. Boring logs		
5. Permanent bench marks shown		
6. Temporary bench marks shown		
7. Applicable cross sections		
8. Applicable profiles		
9. Bar scales		
10. North arrow		
B. Construction specifications		
1. Add items of work and construction details if necessary		
C. Construction Quantities		
1. Correlate quantities with bid items if contract established		
D. Job Sheets		
1. Determine job class		
E. Design Report		
F. Draft Pollution Plan		
G. Submit draft to DC to obtain review comments		
1. Date Sent		
2. Date Comments Received		

Designs completed by members of the State Design Unit.

Design Checked by: _____ Date: _____
State Design Engineer

6. Complete the design and distribute the construction materials.

V. INCORPORATE REVIEW COMMENTS AND PRODUCE FINAL PRODUCT	Complete	N/A
A. Construction drawings		
1. Plot in 11” x 17” format		
2. Engineer’s seal on each sheet		
B. Construction specifications		
1. Engineer certification		
2. Engineer seal		
C. Construction Quantities		
D. Job Sheets		
1. All applicable job sheets signed		
E. Design Report		
1. Signed/Sealed by State Design Engineer		
2. Signed/Sealed by State Conservation Engineer		
F. Transmit final documents		
1. Originals to District Conservationist (date)		
2. Copy to District Conservationist (FO files)		
3. Copy to Area Engineer		
4. Copy to SDE (NMSO files)		
5. Copy to SCE		
6. Copy to CNMP planner		

ADDITIONAL INFORMATION & MISCELLANEOUS NOTES

REVIEW COMMENTS (Include a cross-reference to the applicable section.)

APPENDIX H

NEW MEXICO NRCS OFFICES

Directory also available on NRCS homepage: http://www.nm.nrcs.usda.gov

1920 North White Sands Blvd.
Alamogordo, NM 88310
Phone: 505/437-1030
Fax: 505/437-8443

4374 Alexander Blvd. NE
Albuquerque, NM 87107
Phone: 761-4684
Fax: 761-4624

3105 W Main, Star Rt W, Box 11A
Artesia, NM 88210
Phone: 505/746-4121
Fax: 505/748-2609

1427 Aztec Blvd. Suite #1
Aztec, NM 87410
Phone: 505/334-6888
Fax: 505/334-8569

Federal Bldg. 114 S. Halaguena, Rm. 137
Carlsbad, NM 88220
Phone: 505/885-5751
Fax: 505/887-5700

409 Central Avenue
Carrizozo, NM 88301
Phone: 505/648-4293, -2941
Fax: 505/648-2558

P.O. Box 25
Chama, NM 87520
Phone: 505/756-2581
Fax: 505/756-2509

20 North Second St.
Clayton, NM 88415
Phone: 505/374-2391
Fax: 505/374-2970

Federal Bldg. and Post Office
5th and Gidding, Rm. 235
Clovis, NM 88101
Phone: 505/763-7412
Fax: 505/763-0034

P.O. Box 2048
Crownpoint, NM 87313
Phone: 505/786-7094
Fax: 505/786-7213

E. Side of State Hwy 44, Box 250
Cuba, NM 87013
Phone: 505/289-3278
Fax: 505/289-3278

P.O. Box 136
Datil, NM 87821
Phone: 505/772-5722
Fax: 505/772-5822

405 E. Florida
Deming , NM 88030
Phone: 505/546-9692
Fax: 505/546-0038

424 G. South Riverside Drive
Espanola, NM 87532
Phone: 505/753-2246-47
Fax: 505/747-1104

521 Fifth Street, Box 58
Estancia , NM 87016
Phone: 505/384-2382
Fax: 505/384-3043

101 South Stearns
Fort Sumner, NM 88119
Phone: 505/355-2302
Fax: 505/355-7437

Federal Building Rm. 162 305 West Hill
Gallup , NM 87301
Phone: 505/722-7355
Fax: 505/722-0847

117 N. Silver
Grants , NM 87020
Phone: 505/287-4045
Fax: 505/287-7049

2507 North Telshor
Las Cruces, NM 88001
Phone: 505/522-8775
Fax: 505/522-2369

1926 7th Street
Las Vegas, NM 87701
Phone: 505/425-1430
Fax: 505/454-0560

405 Duncan Highway
Lordsburg, NM 88045
Phone: 505/542-9141
Fax: 505/542-3295

Agricultural Service Center Bldg.
27, Courthouse Rd.
Los Lunas, NM 87301
Phone: 505/865-4642
Fax: 505/866-0662

1700 South Main
Lovington, NM 88260
Phone: 505/396-5858
Fax: 505/396-5768

USDA Office Bldg., Box 389
Mora, NM 87732
Phone: 505/387-2424
Fax: 505/387-9019

121 W. Broadway, Box 129
Mountainair, NM 87036
Phone: 505/847-2941
Fax: 505/847-0615

705 E. Canadian St.
Portales, NM 88130
Phone: 505/356-4465, -4466
Fax: 505/359-2134

Post Office & Federal Bldg., 245
Park Ave., Rm 206
Raton, NM 87740
Phone: 505/445-9571
Fax: 505/455-4066

1011 South Atkinson
Roswell, NM 88201
Phone: 505/622-8746
Fax: 505/625-0730

Old Blasi Bldg., 3rd and Chicosa
Floersheim
Roy, NM 87743
Phone: 505/485-2294
Fax: 505/485-2495

St. Michael's Professional Bldg. Ste.
201 1911 Fifth Street
Santa Fe, NM 87505
Phone: 505/471-9160
Fax: 505/471-9160

586 So. Ninth St.
Santa Rosa, NM 88435
Phone: 505/472-5401
Fax: 505/472-5853

2610 North Silver
Silver City, NM 88061
Phone: 505/388-1569 or
1-800-634-5116
Fax: 505/538-0568

103 Neel Street NW
Socorro, NM 87801
Phone: 505/835-1716
Fax: 505/835-3872

Sierra Conservation Plaza, 2101 S.
Broadway
T or C, NM 87901
Phone: 505/894-2212
Fax: 505/894-2165

Box 1928
Taos , NM 87571
Phone: 505/758-3701
Fax: 505/758-7650

Quay Development Bldg., 706 S.
First St., Box 4
Tucumcari, NM 88401
Phone: 505/461-3801
Fax: 505/461-0285

Comprehensive Nutrient Management Planning Technical Guidance, New Mexico

USDA-NRCS

September, 2001, updated October, 2006

(180-vi-NPPH, Amendment NM 11, October 2006)