

**C**omprehensive Nutrient Management Planning (CNMP)... will serve as the cornerstone of environmental plans assembled by animal feeding operations... .

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## Comprehensive Nutrient Management Planning

Recently, the concept of Comprehensive Nutrient Management Planning (CNMP) was introduced by the U. S. Environmental Protection Agency (EPA) and U.S. Department of Agriculture’s (USDA’s) Natural Resources Conservation Service (NRCS). It is anticipated that the CNMP will serve as the cornerstone of environmental plans assembled by animal feeding operations to address federal and state regulations. At the time this lesson was written, the issues addressed by a CNMP were only broadly defined. EPA and NRCS guidelines for CNMP provide an indication of the key issues to be addressed (Table 2-5) by this planning process (USDA 2000 and USDA and U.S. EPA 1999).

The basic functions of a CNMP are expected to be as follows:

- A CNMP should serve as the environmental “operating plan” for a livestock or poultry operation. It should detail the management practices for minimizing the impact of nutrients and manure on soil, water, and air resources. The producer should be intimately familiar with this “operating plan” and use it to guide management decisions and convey desired outcomes to all participants in an animal operation (owner, manager, employees, and advisors). This same plan should also convey the management strategies employed to appropriate regulatory agencies.
- A CNMP should carefully analyze nutrient issues from a (1) “whole farm” perspective, assessing concentration of nutrients within the farm (comparison of sources and quantities arriving on-farm and exported from the farm), as well as (2) the “individual component” perspective such as a crop nutrient balance or animal feeding program analysis. Historically, only the crop nutrient management component was considered in most environmental plans.
- A CNMP should integrate nutrient management planning with other environmental considerations such as soil conservation and odor

**Table 2-5. Summary of issues addressed by a CNMP as initially defined by EPA’s Guidance Manual and Example NPDES Permit for Concentrated Animal Feeding Operations (CAFOs)<sup>1</sup>.**

Planning components of CNMP	Issues addressed
A manure handling and storage plan	(1) Diversion of clean water (2) Prevention of leakage storage plan (3) Adequate storage (4) Manure treatment (5) Management of mortality
Land application plan	(1) Proper nutrient application rates to achieve a crop nutrient balance (2) Selection of timing and application methods to limit risk of runoff
Site management plan	Soil conservation practices that minimize movement of soil and manure components to surface and groundwater
Recordkeeping	Manure production, utilization, and export to off-farm users
Other utilization options plan	Alternative safe manure utilization strategies such as sale of manure, treatment technologies, or energy generation
Feed management plan	Alternative feed programs to minimize the nutrients in manure

<sup>1</sup>Reference is available from <http://www.epa.gov/owm/finafost.htm>.

management. Many proposed BMPs can positively affect some resources (e.g., manure incorporation can reduce odor concerns) while damaging other resources (e.g., manure incorporation can increase soil erosion). Balancing the protection of water, soil, and air resources should be the objective of a successful CNMP.

- A CNMP should establish a record-keeping system that will document the degree of implementation and success of the proposed management practices and identify future changes to improve the plan.

The form that a CNMP is likely to take will evolve over the next several years. One state’s CNMP framework is illustrated in Figure 2-8. However, the fundamental principles addressed by a CNMP will remain relatively unchanged. Those principles are introduced in the following lessons:

- Whole farm nutrient balance: Lesson 2
- Managing manure nutrients in crop production: Lessons 30-36
- Managing nutrients in animal feeding programs: Lessons 10-13
- Managing manure and other byproducts in a manure storage: Lessons 20-24
- Managing odors: Lessons 40-44
- Alternative treatment technologies for nutrient disposal: Lesson 25

## CNMP should

- Analyze nutrients from a whole farm and an individual component perspective.
- Balance water, soil, and air quality issues.
- Include recordkeeping to document CNMP implementation.

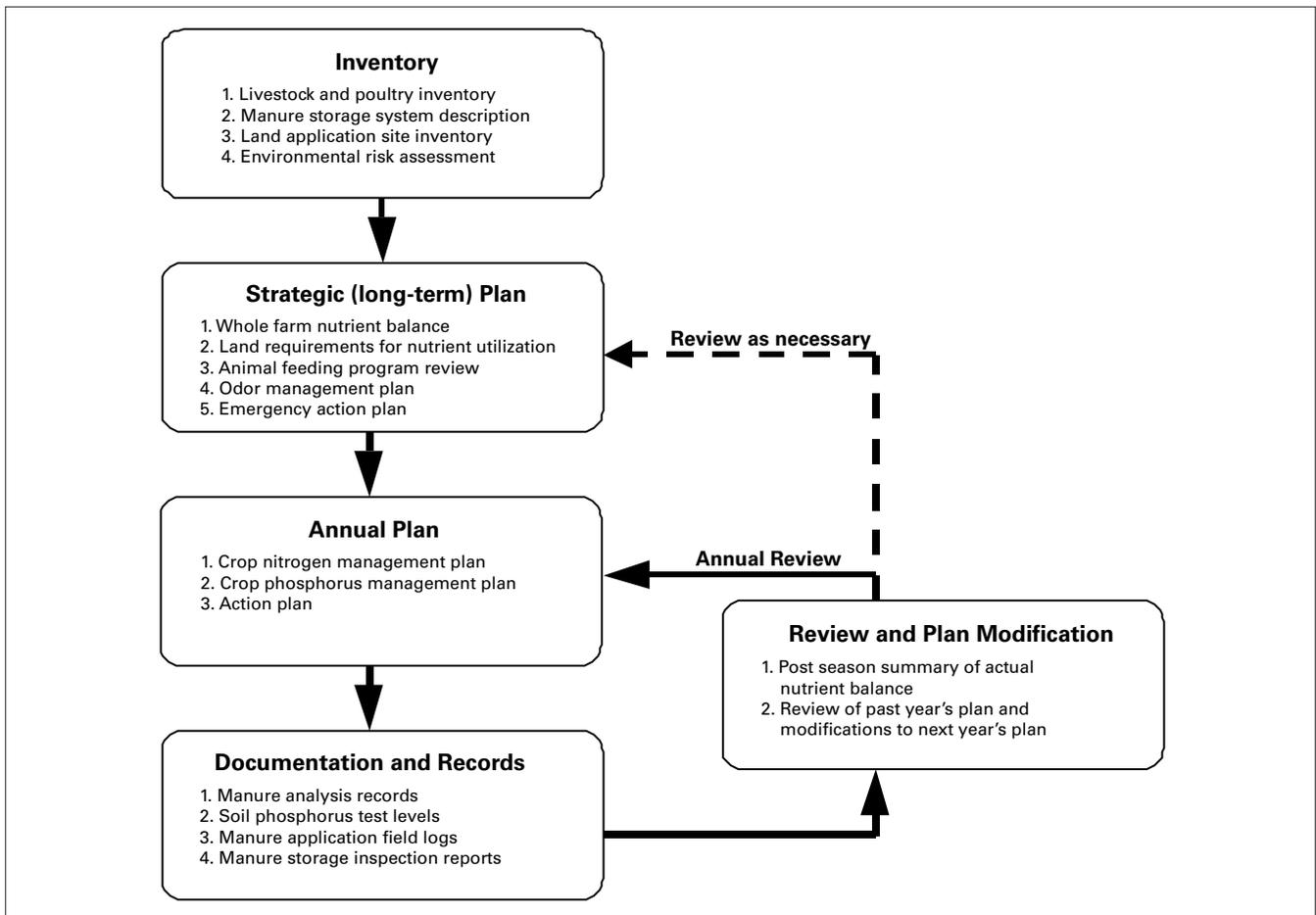


Figure 2-8. A framework and several example tools are illustrated for a CNMP in Nebraska. This CNMP organizes components according to a chronological order that a producer would follow in the CNMP’s development and implementation.