

A Wisconsin Comprehensive Nutrient Management Plan Development Protocol

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Introduction

Nutrient management remains at the forefront of environmental issues facing Wisconsin (WI) livestock and crop producers. The need for producers to develop and implement nutrient management plans has grown substantially as a requirement of government agricultural programs, zoning, livestock siting ordinances, and animal feeding operation permits. Improved nutrient management practices have the potential to improve farm profits and reduce detrimental impacts of nitrogen and phosphorus on water quality.

Wisconsin's Natural Resources Conservation Service (NRCS) and the University of Wisconsin (UW) have been cooperating to develop a comprehensive nutrient management program for the state. Partnering with NRCS in this effort are: UW-Discovery Farms Program, UW-Extension, UW-College of Ag and Life Sciences, WI Agricultural Stewardship Initiative, and the Multi Agency Land and Water Education Grant (MALWEG) group. Cooperative projects have improved nutrient management tools and outreach programs in WI, including: SNAP-Plus nutrient management software, RUSLE 2 soil loss model, the WI Phosphorus Index, NRCS-590 nutrient management standard, P-based nutrient management planning, NRCS-Technical Service Provider training, MALWEG local nutrient management education projects, UWEX Conservation Professional Development and Training Program outreach, and Comprehensive Nutrient Management Planning training and development.

Comprehensive Nutrient Management Planning (CNMP), or more appropriately, whole farm environmental planning has become an important issue for agricultural producers and governmental agencies in WI. Certain USDA programs now define circumstances where producers must develop CNMPs for program participation. In 2003 WI - NRCS determined that statewide guidance was needed to clearly define necessary components of a CNMP and suggest a method for planners to develop CNMPs with WI farmers, as well as a method for WI-NRCS to receive and document completed plans.

WI-NRCS asked the UW - Discovery Farms Program (UW-DF) to assist in the development of a state CNMP plan development protocol. The project focused on revising the CNMP planning format and testing it with livestock producers around WI by developing actual CNMPs. The goal of this project was to cooperatively develop a final WI CNMP format that had input from WI-NRCS, agricultural producers, and qualified planners. Beginning in the summer of 2004, Tim Popple (UW-DF) worked with WI agricultural producers and WI-NRCS to coordinate and conduct this project.

Purpose

The report summarizes a UW – Discovery Farms Program project that assisted WI-NRCS to create and field test a CNMP development protocol on 11 pilot farms. This project was funded by the WI – NRCS to enhance nutrient management initiatives by developing a CNMP approach for the state.

Methods

The project began by compiling and evaluating current NRCS standards and recommendations for CNMP development. The goal was to define necessary components of a CNMP.

The UW – Discovery Farms contacted representative WI agricultural producers and asked them to participate by having a CNMP developed for their farm and to also provide feedback associated with the plan development process.

The CNMP plan developer worked with the producers, their private sector consultants, and their public sector conservation specialists to gather and compile information to develop the following farm specific CNMP sub-plans: Conservation Plan, Nutrient Management Plan, Pest Management Plan, Feed Management Plan, Prescribed Grazing Plan, Operation and Maintenance Plan, and Biosecurity Plan.

The CNMP plan developer worked with 1-2 producers at a time. Through the process, a CNMP development guide was created for gathering farm management information and compiling all the necessary pieces of the plan. The CNMP development protocol was tested and revised with each new set of 1-2 agricultural producers. Each new version of the CNMP development guide was regularly presented to an NRCS workgroup for feedback and revisions. The NRCS workgroup presented the final CNMP development guide to the WI-NRCS State Office as a model for consideration.

Results and Discussion

UW-DF and WI-NRCS cooperatively worked with 11 livestock producers to test sequentially improved plan development protocols and develop farm specific CNMPs. The 11 participating farms represented a diverse group, located in the following WI counties: Buffalo, Burnett, Columbia, Iowa, Kewaunee, Lafayette, Manitowoc, Marathon, and Vernon. A description of farm livestock types include: Confined Animal Feeding Operation (CAFO) dairy, large confined dairy, medium confined dairy, medium grazing dairy, small grazing dairy, and large beef finish feedlot.

Developing CNMPs

It became apparent early on in the CNMP development process that it would be difficult for a single CNMP author to individually have the qualifications and expertise to develop all the required components of a CNMP. Instead, a CNMP author becomes more of a general contractor of the development process. It is the CNMP author's primary responsibility to put together a team of qualified professionals who will work with the producers and their conservation specialists to gather farm specific information and develop sub-plans within a CNMP.

The CNMP author organizes the plan creation process and provides development guide tools and templates to the professional team working with individual producers. The development guide needs to be accurate and structured efficiently to gather necessary information from the producer and agency personnel in order to assemble the individual sections of the CNMP. Individual sections and sub-plans of a CNMP each have specific requirements and NRCS standards that must be met.

The general development process is described in list format below:

1. Contact producer to set up initial farm visit.
2. Meet with local agency personnel to gather planning information.
3. Assemble farm background information and identify planning team.
4. Provide individual professional planners with development guide and templates.
5. Schedule farm interviews to gather necessary information for sub-plan development.
6. Generate various sub-plans according to NRCS standards.
7. Review and evaluate all sub-plans.
8. Generate a list of recommendations per subsection of the CNMP.
9. Schedule and conduct on-farm meeting to discuss sub-plans and recommendations.
10. Review and edit recommendations based on farm specific priority and practicality.
11. Finalize and assemble sub-plans and additional information into the CNMP format.
12. Schedule and present completed CNMP to local agency personnel.
13. Schedule follow-up meeting with producer to assist with the implementation of recommendations and record keeping.

It is the CNMP author's responsibility to assure the producer that all requirements have been met and to inform the producer of the steps necessary in order to receive the maximum benefits from the CNMP planning process.

Refining the Process

The original version of the CNMP development process revolved around several sub-plan checklists generated at the national NRCS level. This format was very "comprehensive", yet it was redundant and the prioritization of on-farm actions was unclear. As UW-DF assisted the first couple farmers to work through the original CNMP development process, it became clear that changes were needed based on the planner and producer experiences.

Planner, producer, and agency personnel comments and feedback were provided to a CNMP workgroup, consisting of WI-NRCS state personnel, district conservationists and UW-DF. Comments and feedback included:

- ? Redundancy – asking for same information too many times.
- ? Liability Concern – If plan is required, there should be a formal review and sign-off process to assure producers that they meet the standards. Technical Service Providers and NRCS / LCD should accept some liability.
- ? NRCS should provide environmentally sensitive areas and prohibition maps.
- ? Too much time spent in plan development.
- ? Checklists do not correspond with producer priorities.
- ? Emergency Action Plan is too long and complicated. Streamline it.
- ? Need clear set of recommendations and realistic implementation schedule.
- ? Too many checklists – Need one place for NRCS and producer to review.

- ? Need a contact information sheet for all parties involved with CNMP development.
- ? Need to streamline plan narrative. Reads like a book, too long.
- ? Separate narrative into individual sections of CNMP, along with recommendations.
- ? Maps need to include environmentally sensitive areas and winter spreading areas.
- ? Engineering assessment is too complicated, with no clear consistent method for conducting the assessment.
- ? Need more illustration (charts/graphs) of site layout for gathering engineering information.
- ? Need consistent method for evaluating animal lots.
- ? Need templates for gathering information for sub-plans: Conservation Plan, Feed Management Plan, Pest Management Plan, Grazing Plan.
- ? Criteria needed to define when optional plan parts (feed, pest, grazing) are needed.
- ? Need record keeping format for operation and maintenance plan.
- ? Need to compile standardized list of reference materials to be included in plan.
- ? CNMP Planners: Training and certification process needs to be upgraded with more on-farm situations.

The workgroup sequentially revised the planning protocol after every completed plan, and UW-DF tested each revised process with the next set of producers. This process repeated itself several times over 2 years and has resulted in 5 major revisions to the WI - CNMP development process.

The first major revision involved combining checklists and information gathered within sub-plans. This revision went a long way towards eliminating redundancy and repetition of information.

The second revision dealt primarily with prioritization of issues within the CNMP planning process. Based on producer comments, it was decided that recommendations for changes should be moved to the front of plan along with priority given to the mapping sections.

The third revision dealt with streamlining the process. It was felt by both agency personnel and producer groups that much of the information could be presented in a more efficient manner. Work went into making the reports more readable and condensed.

The fourth revision dealt with the review process. Agency personnel directed the process towards moving the narrative and recommendation sections into the individual sub-plan sections. The primary reason for this change was based on the fact that these individual sub-plans are stand alone documents.

In early 2007, the CNMP workgroup will finalize an agreed upon protocol for necessary components of a CNMP, a suggested method for planners to develop CNMPs with WI farmers, and a method for WI-NRCS to receive and document completed plans submitted by farmers. WI-NRCS and UWEX Conservation Professional Development and Training Program will begin presenting this material at training sessions. WI-NRCS is also processing the development protocol into template formats for distribution to private sector CNMP planners.

Conclusion

Through this project, UW-DF and WI-NRCS have jointly created a protocol for WI Comprehensive Nutrient Management Planning. Evidence for success and that a valuable product has been created is revealed through the attendance at training workshops by agency personnel, producers, and private sector consultants, as well as requests for protocol templates.

Also, through the project it was clear that producers wanted a practical and achievable prioritization given to natural resource and environmental issues on their operations that needed change, without a lot of redundancy and excess documentation. Producers involved in the project feel that has been accomplished. Producers that had CNMPs developed through the project feel ownership and believe their participation and feedback helped shape CNMP plan development protocol for WI.

WI-NRCS agency staff now believes that the CNMP development protocol is ready for distribution to the private sector. NRCS plans to partner with UWEX Conservation Professional Development and Training Program to provide training and education to the private sector and agency personnel involved with the development of CNMP's in Wisconsin.

Recommendations

- ? Basic plan components need to be completely defined so that all parties (producer, lead CNMP planner, private sector consultants, public sector conservation specialists, local NRCS, and WI-NRCS) know that the CNMP developed for a specific farm is done, submitted to the correct agencies, and most importantly meets NRCS standards.
- ? CNMP developers need clear definition of the content required within each sub-plan. They should be provided CNMP format templates and development tools and know how and where to find template and tool updates.
- ? CNMPs should highlight and prioritize areas where on-farm change is recommended. Producers do not want a lot of documentation defining what they already do correctly. They are most interested in recommendations for improvement.
- ? Local conservation agencies need a clear set of guidelines for CNMP development to assist them in reviewing submitted plans. A clear plan of action is necessary to process CNMPs that need revisions and upgrades in order to meet NRCS standards.

- ? Continue and improve training opportunities for producers, private consultants, and public sector conservation specialists responsible for CNMP development.
- ? Let the next year's CNMPs be developed using the existing protocol. Good revisions can best be considered after using the current format and formally evaluating its effectiveness.