

**Wisconsin's Re-Thinking Nutrient Management Ad Hoc Committee's Nutrient Management  
Recommendations  
April, 2012**

In December, 2011, the Wisconsin Land and Water Conservation Association and Michael Fields Agricultural Institute launched a series of four meetings of farmers, state and federal agency staff, county conservationists, environmental and farm group representatives, crop consultants, university researchers and outreach staff, to consider the state of nutrient management in Wisconsin. All invitees were asked to submit in advance their views of the top three barriers to widespread adoption of nutrient management in Wisconsin and ways to overcome those barriers; many respondents addressed barriers associated with nutrient management plans (NMP).

At the December meeting, the group expanded, distilled and prioritized the list of barriers, identifying three on which to base continuing discussions. These were: 1) Lack of Confidence in NM planning; 2) NMPs are too complex; and 3) There is little accountability for performance. In the subsequent meetings, the group identified several strategies and recommendations to address these concerns, resulting in six broad recommendations, with notations about detailed recommendations, rationale and issues that remain to be resolved for each, as follows.

**1) Develop Better Collaboration Among Agencies, Consultants, and Farmers on Nutrient Management Plans and Implementation**

**Recommendations**

1. Agencies, consultants and farmers need to clarify roles to improve communication and effectiveness.
2. The Land and Water Conservation Board should establish water quality goals. This would help all stakeholders understand where and how much work would be needed to address nutrient reduction targets.
3. County Land Conservation offices should evaluate the nutrient management needs of specific farms in the context of watershed needs. This would help target efforts.
4. We need to develop better water quality measures for proper evaluation.
5. We need better inventory tools to establish priorities and minimize unnecessary nutrient management planning.
6. We need to build greater "farmer ownership" of NMPs. As addressed in later recommendations, farmer training is one means of pursuing this.
7. Modify the Nutrient Management Checklist to focus on performance goals rather than regulation for cost-share/program compliance.

**Rationale** - Achieving any economic or environmental benefit from nutrient management requires actual implementation of the plan. Since farmers, consultants, coops, haulers, and agencies may all have a stake or role in various parts of the plan, a lack of understanding or communication among

these players can compromise implementation and therefore the effectiveness of nutrient management.

**Outstanding Issues** - Nutrient management tries to balance two big objectives – water quality and economic return on inputs. These objectives are currently reflected in the state-level nutrient management standards: Nutrient management in ATCP 50 (NRCS 590 standard applies to all farms, and those livestock farms with less than 1,000 animal units; and, Nutrient management in NR 243 (more restrictive standards which apply to all livestock farms with a WPDES permit – mostly farms with more than 1,000 animal units, or CAFOs). There is not always agreement by different stakeholders on the balance between the objectives of nutrient management as reflected by the current state standards. For example, some believe nutrient management should have meaning beyond the 590 standard; for others, it's clear that current standards are not constructed with principal concern for water quality; and some believe the standards restrict agricultural production unnecessarily. The lack of “buy-in” for some stakeholders undermines consistent nutrient management plan development and implementation.

Agency staff, especially at the local level, has a wide range of nutrient management knowledge and ability to review or assist with nutrient management plan training or review. This inconsistency from county to county may put farmers at a disadvantage, whether it is getting assistance for plan development or in county interpretation of the adequacy of plans for compliance purposes.

Standards are constantly in need of change to reflect changing agriculture and science, and therefore the existing standards may be viewed as out of date and no longer relevant. Focusing on the current standards limits the longer range view that can help address changing conditions.

## **Next Steps**

**Standards** - USDA NRCS will be reviewing the 590 Nutrient Management Standard during the next year. Wisconsin's Standards Oversight Council will then take up the standard for stakeholder input on the content of specific revisions. DATCP will also be considering changes to ATCP 50, including changes to the nutrient management standard as a result of the recent amendments to NR 151. We should assist in the development of input to those reviews/revisions to the standards, based on recommendation above, with the goal of achieving the best balance of farm profitability and water resource protection.

**Implementation Tools** - Develop new, or investigate existing watershed management tools, reporting schemes, water monitoring methods, landowner incentives, and farmer engagement techniques that help target activities, provide accountability, and show physical results.

## **2) Increase Conservation Technical Assistance**

**Recommendation** - We seek to increase the capacity and relationship between LWCD field staff and farmers and, consultants. Our goal would be to have at least one full time staff person in each LWCD office with a background in agronomy and crops science that would serve as the lead contact on nutrient management.

**Rationale** - There is spotty capacity across the state in the conservation departments and in the private sector. There's a need for more clearly designated conservation roles among county staff, especially where local conservation departments have been merged with other county departments; we seek to help start clarifying distinct roles and relationships among staff. There is also a need for increased technical and financial assistance so staff can spend enough one-on-one time with farmers that they "own" their NM plan. And it will help provide more conservation technical assistance from conservation technical staff to make conservation calls related to conservation funding.

**Outstanding Issues** - County staff workloads are heavy, with little state support anymore, although nutrient management is a statewide issue. How do we fund and staff these positions, especially given the diversity of conservation offices across the state's counties, for whom funding and support differ? Could sharing technical assistance across counties be part of the solution? One idea is to create nutrient management positions that are like a septic inspector such that every county has to have one and there are certain requirements for what they need to be able to do.

**Next Steps** - We will pursue how needed funding and positions relate to existing LWCD structure and the assistance provided by private sector. This will include discussions among DATCP, DNR, farmers, WLWCA, WAPAC, all county staff, and land conservation committees.

### **3) Increase Nutrient Management Education for Farmers, Consultants, Retail Partners**

#### **Recommendations**

1. Since CCAs already have a system in place, we recommend that the state require that CCAs receive training around the soil and water components of the curriculum before becoming a DATCP qualified nutrient management planner. Since experience has shown that if farmers are educated to want to purchase less fertilizer, they will push retail agronomists to revise their recommendations. Therefore, rather than focus our strategy on trainings for retail agronomists, we focused on educating farmers.
2. Farmer education has existing structures (e.g., technical colleges, NRCS staff, state and county agency staff, UW Extension) One thing currently lacking is follow-through to existing training, particularly in one-on-one farmer exchanges where farmers can share their experiences (analogous to pasture walks in the grazing world). We recommend encouraging existing education-providers to focus on providing one-on-one education events as well as education in other contexts (e.g., conferences, workshops, and other existing formats). We also recommend that these existing education providers provide advanced training for people who need updates/refinements on existing information.

**Rationale** - Education of different audiences addresses different goals. For example, one of our other recommendations is to make it easier for farmers to be certified in nutrient management, so one goal is to educate farmers in preparation for such certification and to empower farmers to write their own nutrient management plans. We also aim to inform farmers about actual water quality problems stemming from agriculture, about potential benefits and costs to themselves of nutrient management, and to dispel farmer misconceptions/ fears about NMPs, state standards, etc. Finally,

we aim to educate certified crop advisors, consultants, retail agronomist partners regarding the best nutrient management practices, especially regarding soil conservation and water quality.

**Outstanding Issues** - Who determines what audiences need updates and refinements of existing information?

**Next Steps** - We propose to gather all groups of educators and ask them what they see as being needed, and how best to coordinate and synergize their various functions. We also will create a process to persuade major agricultural groups in Wisconsin to engage in and support nutrient management education efforts; if more financial resources are needed, these groups should be asked to help offer political support for them.

#### **4) Certify Producers as Nutrient Managers/Applicators**

**Recommendations** – There are three alternative approaches to pursue.

A) Explore development of a certification process that would allow agricultural producers to write a simplified NMP for use on their farm by following a standardized plan template. Authorization to use the simplified plan template would be based on completion of a training curriculum specific to the plan template and passing a test or other demonstration of competency.

The simplified plan template would summarize the crop production and environmental criteria contained in the Wisconsin Agricultural Performance Standards.

An approved record keeping system must be implemented to document implementation of the simplified nutrient management plan.

A combination of continuing education requirements and random quality assurance of simplified nutrient management plans would be used to ensure the integrity of the planning process.

B) Conduct a broad outreach program to increase utilization of DATCP's current farmer-developed NMP certification process. Graduates of the current farmer training for NMP development are "deemed qualified" to write NMPs to meet agricultural performance standard requirements for land they operate.

C) Explore and clarify linkages between A) and B) and contrast them with the existing formal NMP process.

**Rationale** –Offering producers more flexibility in achieving nutrient management (e.g., less rigorous sampling) can encourage a wider farmer culture of nutrient management.

**Outstanding Issues** – How would we determine if nutrient management is being done well, and against what standards one would enforce if there seemed to be problems. Nutrient management certification wouldn't be quite the same as Pesticide Applicator Training, because PAT has specific application requirements to be followed, whereas nutrient management is more complex and a system with many variables to consider; also PAT is required, whereas nutrient management certification would be optional.

**Next Steps** – One approach is to convene a group to develop a certification process as sketched above. Another approach is to conduct active outreach to the farm community regarding the portion of ATCP 50 that provides training enabling a farmer to be approved to write his/her own farm NMP.

**(5) Improve implementation of NMPs using “Precision Ag” technology or alternatively, “Zone” Management concepts**

**Recommendations** - Precision agriculture technology should be combined with GIS/GPS to allow farmers to vary application rates for areas in a field and not be limited by dominant soil type or other restrictions applied across an entire field. This process would lump soil types, soil test P, and other management factors to allow grouping of fields of similar management.

**Rationale** - Improving technology allows fields to be managed at the sub-field level to deal with soil areas of differing recommendations within the same field. Currently, a “dominant, critical soil type” determines the management for the entire field. Improving technology would allow for easier, hands-on use of outputs along the lines of SNAP Plus types of NMP, would allow for more precision. Grouping of fields will reduce the number of fields to separately manage, making it easier to develop and implement an NMP.

**Outstanding issues** - There may be an assumption that you can use this technology instead of doing a NMP. Without soil test data at a minimum, you would not have a starting point for an NMP, and certainly not for a watershed project based on phosphorus control. And “precision agriculture” technologies are not yet used on all farms.

**Next Steps** – As we look toward future technologies to provide faster, more accurate planning tools, we need continued discussion with SNAP Plus developers to see if tools can be developed to help move us toward these recommendations.

**(6) 590 EZ Format option for nutrient management plans**

**Recommendation:** Continue to explore formal policy allowing the “590 EZ format” as an option for meeting farm nutrient management planning requirements by some farms in Wisconsin.

**Rationale** – Although SNAP Plus is increasingly used, the 590 EZ format provides an attractive approach to developing and implementing a NMP for farmers of some types. Particularly for small operations and for older farmers near retirement, the learning curve for SNAP Plus, or the expense incurred in hiring professional development of a SNAP Plus plan, is perceived a barrier to both plan development and annual plan updates. Even though the electronic nature of SNAP Plus facilitates plan updating, there is still an annual re-learning curve for the casual user that may be a significant obstacle to planning.

Farms with a relatively low level of complexity and environmental risk may be able to plan effectively using a 590 EZ approach. Therefore, in these situations, if it is deemed by the farm manager to be the most desirable and efficient approach, the 590 EZ format should remain an option. These may be farms with some combination of the following: there is no manure; there is manure but the farm is not over-stocked and soil test phosphorous levels are generally under 50 ppm; there is ample land accessible for winter manure spreading within the provisions of 590 standard; there

are not significant risk challenges on the farm with respect to surface and groundwater contamination from existing fertilizer and manure use; existing use of fertilizer and manure is very low; low-intensity or managed grazing system farms.

**Outstanding Issues** – The 590 EZ plan format needs to be able to calculate multi-year, or rotation-wide nutrient budgets. For example, depending on the field’s soil test level, an excess amount of phosphorous applied in the current planning year is allowed by the 590 standard as long as it is used up in subsequent years of the rotation. Since 590 EZ plans are generally annual plans, there is no good way of calculating a multi-year nutrient budget and tracking how or whether the phosphorous is subsequently used up.

The 590 EZ plan needs to be able to address the soil and water conservation aspects of the NMP, specifically the phosphorous index (PI) score and the RUSLE2 soil erosion estimate for each field. These are based on multi-year, crop rotation factors including planned tillage and nutrient application practices and are required by NR 151 and ATCP 50. Making these calculations manually from paper records would be difficult. Practical, stand-alone software for RUSLE2 and PI calculations to complement a hand-written plan is not readily available. The SNAP Plus software contains the algorithms to makes these calculations. Currently, since the EZ process does not produce a P Index value, it does not produce a plan that meets the state performance standard. DNR determines what alternatives to the standard are acceptable. Thus, any agreed upon alternative will need to be forwarded to DNR for approval.

What would be specific criteria, or guidelines, as to what farm types and situations would be eligible for, or best suited to, the 590 EZ format option?

Finally, how would compliance with state standards be ensured?