NORTH DAKOTA'S

Nutrient Reduction Strategy

Planning Team Meeting Summary

November 20, 2012 • Bismarck, ND • 9:00 a.m. – 3:00 p.m.

Background

Nutrient pollution is consistently one of the nation's leading causes of water quality degradation. Even here in North Dakota, many of our lakes and streams are not fully supporting beneficial uses such as fishing and recreation because of excess nutrients (e.g., nitrogen and phosphorus). On a national level, nutrient management including the development of state specific water quality numeric standards for nutrients is a priority for EPA. In response to this state and federal interest, the North Dakota Department of Health (NDDoH) is facilitating the development of a state nutrient reduction strategy for North Dakota. To assist in this process, various agency and organization representatives were asked to serve on a planning team. The first meeting of this planning team took place on November 20, 2012. The purpose of this first meeting was to:

- Meet and get to know one another;
- Come to a common understanding of the nutrient management issues facing our state and to identify gaps in our common understanding; and
- Begin to outline the key elements of a state strategy and the process for developing the strategy.

List of Attendees:

Name	Affiliation
Ted Alme	Natural Resources Conservation Service
Eric Aasmundstad	North Dakota Farm Bureau
Al Basile[1]	US EPA Region 8
Randy Binegar	Tesoro Refinery/North Dakota Water Pollution Board
Jodi Bruns	North Dakota State University Extension
Kari Cutting	North Dakota Petroleum Council
Keith Demke	City of Bismarck
Mike Ell	North Dakota Department of Health, Division of Water Quality
Scott Elstad	North Dakota Game and Fish Department
Dennis Fewless	North Dakota Department of Health, Division of Water Quality
Rebecca Fisher	Tetra Tech
Dave Franzen	North Dakota State University Extension
Joel Galloway	US Geological Society
Dave Glatt	North Dakota Department of Health, Environmental Chiefs Office
Doug Goehring	North Dakota Department of Agriculture
Lareina Guenzel[1]	US EPA Region 8
Everett Iron Eyes	North Dakota Tribes, Standing Rock Sioux Tribe

Jessica Johnson	US Fish and Wildlife Service
Craig Maetzold	American Crystal Sugar
Mike McEnroe	North Dakota Wildlife Federation
Wes Niederman	North Dakota Farmers Union
Verle Reinicke	North Dakota Resource Council
Karl Rockeman	North Dakota Department of Health, Division of Water Quality
Greg Sandness	North Dakota Department of Health, Division of Water Quality
Connie Sprynczynatyk	North Dakota League of Cities
Eric Steinhaus[1]	US EPA Region 8
Sandi Tabor	North Dakota Lignite Energy Council
Terry Traynor	North Dakota Association of Counties
Ron Wiederhott	North Dakota State University Extension

[1] Participated via conference call

Welcome and Introductions

Dave Glatt, Chief, Environmental Health Section, NDDoH

Mr. Glatt began by introducing himself and thanking the group for attending the first planning team meeting. He pointed out that the work this group is involved in is extremely important for the state; if North Dakota does not manage its nutrient pollution problem correctly the U.S. Environmental Protection Agency (EPA) may be forced to step in and essentially do it for us. North Dakota does not want this to happen, and it is clear that the state is in a better position to analyze and target local nutrient issues than the EPA might be. Along those same lines, the NDDoH does not assume to know how best to address nutrient issues in all counties and watersheds, thus input from all regions of the state will be necessary during the creation of this strategy.

Mr. Glatt stated that he would like the group to work towards an outline or key components of North Dakota's Nutrient Management Strategy, and then take that document to a broader audience of stakeholders. He emphasized that while the Planning Team will be presented other state examples, it is necessary to identify what is important for North Dakota and what will work for the state's municipalities, industries, and agricultural interests. He continued, stating that the one size fits all approach has been proven ineffective, and we must therefore think critically about our resources and sectors to ensure a cost-effective and technically and scientifically defensible strategy.

Mr. Glatt then encouraged each attendee to state their name and affiliation. He then introduced the meeting facilitator Jodi Bruns from North Dakota State University (NDSU) Extension. Mr. Glatt also introduced Alfred Basile, Eric Steinhaus, and Lareina Guenzel from U.S. EPA Region 8 who were joining the meeting via conference call.

Planning Team Goals & Key Discussion Topics

Ms. Burns echoed Mr. Glatt's remarks, stating that NDDoH cannot complete this effort alone; they require the help and input of other agencies, organizations and individuals, which is why this Planning Team was created. Mr. Burns then asked each attendee to state a few issues, goals, or concerns they have regarding the process of creating a statewide nutrient reduction strategy. The main remarks from the attendees were:

- Integrating accountability and progress reporting into a strategy
- Developing a communication and outreach plan that effectively explains North Dakota's problems and identified solutions to the general public

    - Increased and more frequent education and outreach regarding BMPs
- Numeric Criteria Development
    - See North Dakota Nutrient Criteria Development Plan
    - Should be logical and simple to use
    - How to translate criteria to effluent limits in NDPDES permits?
    - What will impact on cities be?
- Development of a funding strategy for implementation of the statewide nutrient management plan
- Concern about water quality:
    - Protect and improve for future generations
    - Ensure designated uses, what do we want our water to look like?
    - For treatment plants, tertiary treatment is now needed but the infrastructure to do so is not financial available to most regions
    - Nutrient reductions necessary to protect fisheries and recreation
    - Protection of drinking water and ground water
- Concern about the loss of CRP and its impact on nutrient management
- Addressing the problem from agriculture, while not overburdening the sector with mandates and regulation
    - Need to take into account the agronomic factors affecting agricultural production
- Voluntary approach has been seen to work best
    - This has resulted in a positive working relationship with producers
- BMPs are well known but not well implemented
    - North Dakota needs to address evolving technologies and pathways to disseminate these new technologies to rural farmers
- Technology transfer and new technologies
- Documenting effectiveness and recognizing accomplishments
- CFOs and AFOs
    - Minimizing impacts from AFOs
- Need to show improvement and more effectively monitor BMPs and other programs
- The critical problem is that a resource is out of place, nutrients are natural and needed but when storm or irrigation wash them into waterways unintended consequences occur
- What is the background level of phosphorus and nitrogen in North Dakota's waterways?
    - How different seasonal conditions determine the loads into our waterbodies
- How do we address waters outside our borders (MT, MN, and Manitoba)? North Dakota does not have control over what comes into its waterways from upstream sources
- The management strategy should utilize the "four Rs": the right source at the right rate, time, and place.

Following these remarks, Ms. Bruns thanked everyone for sharing their thoughts. She encouraged the Planning Team to remember these priorities, issues, and concerns to inform their discussions throughout the day.

Nutrient Issues from a National Perspective and Background on Other State Nutrient Management Approaches

Mr. Alfred Basile, U.S. EPA Region 8, began his presentation by reiterating some comments mentioned in the round table discussion of key issues. Mr. Basile stated that although nutrients, nitrogen and phosphorus in particular, are essential for aquatic life, too much can create some very significant

problems for our nation's lakes, streams, and coastal waters. He stated that excessive nutrients can degrade habitat for fish and wildlife, render water bodies unsafe for swimming and other forms of contact recreation, create a public health concern for drinking water supplies, decrease property values, and negatively impact local economies. Mr. Basile then discussed the national scope of nutrient pollution, stating that 50% of U.S. streams have medium to high levels of nitrogen and phosphorus. For lakes and reservoirs, more than five million acres are impaired.

Mr. Basile then discussed what the EPA and states have been doing to address nutrient pollution. He mentioned that in the early 1990's EPA recognized that existing state water quality standards were not adequate to protect against excess nutrient enrichment, which had become a major environmental issue on a national scale. Therefore, in 1995 EPA gathered 50 scientists from around the country to help devise a strategy to assist states with the development of numeric water quality criteria for nitrogen and phosphorus. As a result of this meeting, EPA implemented a four step approach to assist states in the development and adoption of numeric criteria. EPA believed back then and still believes today that numeric criteria for nitrogen and phosphorus are necessary, not only to protect high quality waters from further degradation but also to set restoration targets for waters that are already impaired. Since this time, the agency has issued recommended criteria for nitrogen and phosphorus based on different regions of the country, see image below:

I: Willamette and Central Valleys
II: Western Forested Mountains
III: Xeric West
IV: Great Plains Grass and Shrublands
V: South Central Cultivated Great Plains
VI: Corn Belt And Northern Great Plains
VII: Mostly Glaciated Dairy Region
VIII: Nutrient Poor Largely Glaciated Upper Midwest and Northeast
IX: Southeastern Temperate Forested Plains and Hills
X: Texas-Louisiana Coastal and Mississippi Alluvial Plains
XI: The Central and Eastern Forested Uplands
XII: Southeastern Coastal Plain
XIII: Southern Florida Coastal Plain
XIV: Eastern Coastal Plain

See EPA's Ecoregional Criteria webpage for more information -
http://water.epa.gov/scitech/swguidance/standards/criteria/nutrients/ecoregions/index.cfm

Mr. Basile explained that EPA has also issued technical guidance documents to help the states refine these recommended criteria to be more locally appropriate. He explained that EPA formed Regional Technical Assistance Groups (RTAG's) to facilitate scientific exchange for the development and adoption of numeric criteria as well.

Mr. Basile then reiterated Mr. Glatt's point regarding EPA's potential legal obligation to step in if a state is not managing their nutrient problem effectively and have not adopted numeric nutrient criteria. Mr. Basile pointed out that this occurred in Florida where a complaint was filed against EPA by several

environmental groups for failure to perform a non-discretionary duty under the CWA to set numeric nutrient criteria for the State. EPA believes that it is much more effective to work cooperatively with states to address nutrient pollution rather than having to step in and promulgate criteria for the state. Given the severity and costliness of nutrient pollution, the EPA released the Stoner Memo, as was discussed earlier, hoping to prompt states to develop numeric water quality standards on a reasonable schedule, but make progress on reducing loads in the near-term. Mr. Basile commented that from an EPA perspective, the key elements of a state-wide strategy should be to prioritize watersheds and set load reduction goals, ensure effectiveness of source reduction strategies (point source permits, storm water and septic systems, agricultural areas), ensure accountability and report progress to the public, and continue with numeric nutrient criteria development.

Mr. Basile then discussed a few state specific case studies that have utilized EPA's partnership funds (total of 12 states utilizing a total of $300,000). He discussed Ohio, Wisconsin, and Kansas' recent efforts to develop statewide nutrient management plans. Mr. Basile reminded the attendees that there is a great deal of flexibility in how individual states wish to proceed with nutrient reduction strategies. EPA believes that it is very important that states continue to develop numeric nutrient criteria and in the interim use the framework to maximize near-term reductions in nutrient loading. Mr. Basile stated that given the magnitude of this problem on a national scale, reductions from all sources will likely be necessary, thus making collaboration and strong leadership essential.

An attendee asked Mr. Basile to define numeric nutrient criteria. He responded that numeric nutrient criteria are the levels of nutrients that support certain "designated uses" that include fish and wildlife, recreation, water supply, etc. which must be maintained in a waterbody to protect these uses. Mr. Basile pointed to a map in his presentation that displays EPA's recommended numeric nutrient criteria for various ecoregions across the U.S. He explained that these are just recommendations and that while they are scientifically robust, states do have the option of refining these numbers to make them more locally appropriate.

Another question was asked regarding Region 8's support for states and how the EPA and NDDoH would monitor progress. It was mentioned that recently, agriculture significantly reduced their loading into the Chesapeake Bay but they did not receive any publicity or commendation for their efforts. Mr. Basile stated that if an industry or region can demonstrate progress, EPA can support efforts to share that information with the public. He emphasized that part of a communications strategy will be ensuring to give credit where credit is due and monitor progress of the nutrient reduction effort.

Key Elements for North Dakota's Nutrient Reduction Strategy

Mike Ell, Program Manager, NDDoH

Mr. Ell introduced himself to the group, explaining his duties within NDDoH and then introduced the EPA contractor from Tetra Tech, Rebecca Fisher. Mr. Ell began his presentation by outlining the key elements of a nutrient strategy. He suggested three critical issues that he believed should be discussed today: the prioritization of watersheds, development of load reduction goals in priority watershed, and creation of source reduction strategies by source category (i.e. point sources, municipal, industrial, stormwater, septic systems, and agricultural areas). Mr. Ell then went on to address the various issues raised earlier by the Planning Team. He believed that the group had identified a very comprehensive list of issues and actions that North Dakota must consider when developing the statewide nutrient reduction strategy. The main topic areas Mr. Ell identified were:

- Integrating accountability and progress reporting into a strategy

- Prioritization of watersheds or waterbodies
- Developing a communication and outreach plan
- Numeric Criteria Development
- Development of a sustainable funding strategy for implementation
- BMPs are well known but not well implemented
- Documenting effectiveness and recognizing accomplishments
- What is the background level of phosphorus and nitrogen in North Dakota's waterways?
- Using unbiased, peer reviewed, and scientifically sound data

An attendee asked Mr. Ell whether North Dakota had already prioritized their watersheds or waterbodies. He responded that they have not prioritized watersheds in the state yet but see it as a critical step in the development of this strategy. The key will be to identify what factors we wish to use in a prioritization scheme, least degraded or most degraded waters, upstream or downstream, etc. Someone else commented that there is a real problem with waters flowing into North Dakota from other states and Canada, *water that leaves this state is better than the water that comes into it!*

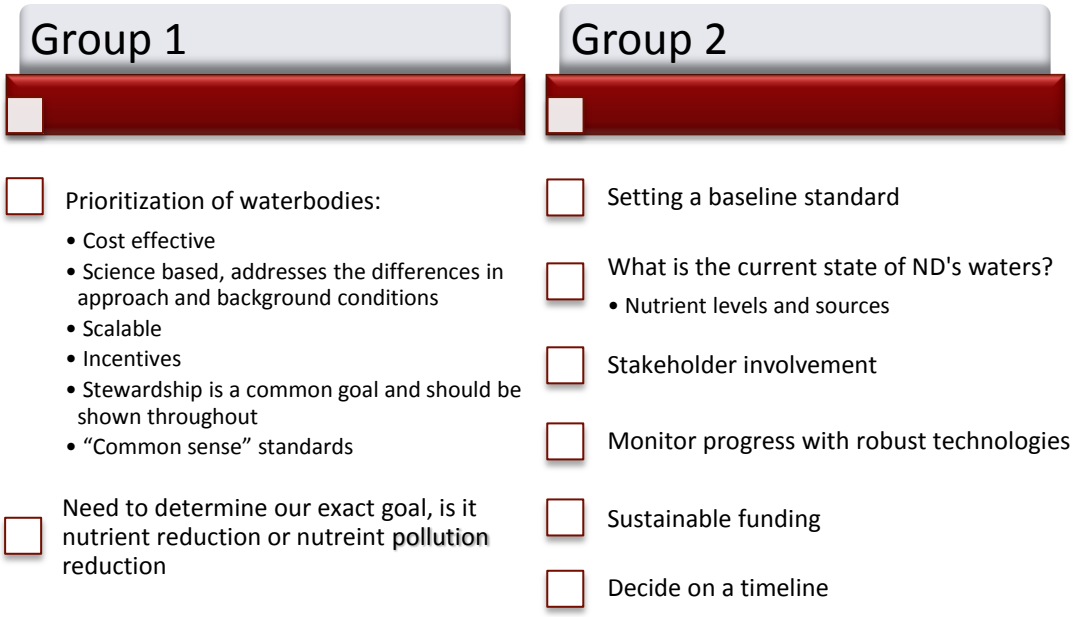
Another attendee suggested that North Dakota look to the United States Department of Agriculture's (USDA) Conservation Reserve Program (CRP) for funding to begin nutrient reduction projects. There was a question from the audience asking if someone on the Planning Team could define CRP. Ted Alme (?) explained that CRP is a cost-share and rental payment program within the USDA, supplemented with technical assistance by USDA's Natural Resources Conservation Service (NRCS). NRCS's natural resources conservation programs help people reduce soil erosion, enhance water supplies with groundwater recharge, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters. From USDA's website, the CRP:

> The CRP protects millions of acres of American topsoil from erosion and is designed to safeguard the Nation's natural resources. By reducing water runoff and sedimentation, CRP protects groundwater and helps improve the condition of lakes, rivers, ponds, and streams. Acreage enrolled in the CRP is planted to resource-conserving vegetative covers, making the program a major contributor to increased wildlife populations in many parts of the country.

CRP participants are provided with annual rental payments, certain incentive payments, and cost-share assistance which could be utilized by North Dakota farmers to implement BMPs and other conservation practices. Someone asked the representative from NRCS if he had any comments on this topic. He stated that North Dakota could use NRCS Environmental Quality Incentives Program (EQUIP) incentives for BMPs, additionally he mentioned that the new farm bill may have some funding mechanisms for BMPs. He also remarked that the EQIP fund has a backlog of applications and is not underutilized.

Facilitated Discussion and Breakout Groups

Ms. Bruns asked the group to take what they had heard from Mr. Basile and Mr. Ell, and think about what aspects they felt were necessary to have in North Dakota's nutrient reduction plan. To facilitate the discussion, Ms. Bruns asked the attendees to separate into two groups and write down the results of their discussion then report back to the entire group. The key elements identified by the two groups were:



The attendees then discussed the above suggestions. Most agreed that while the list seemed daunting, these elements do represent a very good starting point for the state's nutrient reduction strategy. Ms. Bruns then directed the attendees to identify the top priorities from the list; she explained that NDDoH would begin working on those issues the planning team thinks to be most pertinent. Ms. Bruns further explained that if we now know what our strategy should contain, we can begin the process of formulating a document outline. She emphasized that there was no need to get into specifics but that the group should focus on defining the important issues to be addressed in the strategy, including those that should be addressed first.

To inform the discussion, Mr. Ell quickly went over the outline of Kansas' strategy that Mr. Basile had shown the group earlier. The strategy is separated into seven steps and assigns responsibility for various tasks to state agencies, agricultural stakeholders, local government stakeholders, and environmental stakeholders. Mr. Ell explained to the group that this strategy draws its organization and action items from the Stoner Memo. Ms. Fisher presented Wisconsin's strategy as well, which begins by identifying and prioritizing the highest nutrient-contributing watersheds.

The attendees discussed what aspects of these two examples would and would not work in North Dakota. One of the attendees suggested that North Dakota may want to prioritize pristine watersheds, to ensure that they stay that way. One attendee commented that it may make sense to prioritize and focus our nutrient reduction strategies on watersheds that are only slightly degraded rather than investing our limited resources on highly degraded watersheds which may be very difficult to improve. Another attendee suggested developing a score card for each waterbody in the state that would take account for various attributes such as cost of clean-up, current water quality, location, sources of nutrients, presence of endangered species, designated use, etc. He stated that it would then just be a matter of choosing the waterbodies with the highest score. Another attendee pointed out that to create such a tool, we would first need to know a lot about every watershed in the state. He asked Mr. Ell if the NDDoH knows the nutrient sources, water quality, etc. for each watershed in the state. Mr. Ell said no, but there are a few critical watersheds that they do have that type of information for and that could form the basis for their prioritization score card. An attendee mentioned that a very large data gap is the

Red River Basin, it is clear that the river is impaired but the sources of impairment are not well understood.

The group agreed that the first step should be to prioritize watersheds within the state. They tasked the NDDoH with deciding on whether to create a score card or other prioritization method.

The Nuts and Bolts of North Dakota's Planning Team

Ms. Bruns directed the attendees to discuss the mission and organizational structure of the Planning Team. One attendee commented that we should ensure that our mission is routed in a desire to serve the people of North Dakota and not the federal EPA. Another comment was raised about potentially breaking the Planning Team into topic specific sub-groups, for example one sub-group would discuss more technical matters, another would develop activities for stakeholder involvement, and others could focus on legal and political matters. Many attendees felt that this was a good idea and should be pursued.

Ms. Bruns raised the question of where this Planning Team should go from here. She asked them if they felt that they needed to have another meeting or would like to plan a larger stakeholder meeting. Many attendees felt that there were quite a few stakeholders that should be included in these discussions. Ms. Bruns pointed out that while ideally we would like to include all affected parties, the discussions that we had today would be quite difficult with twice the amount of people. She did ask the group that once a stakeholder meeting is planned, what other organizations should be invited, the responses are listed below:

- Water Pollution Advisory Board
- Commodity Groups
- North Dakota Stockmen's Association (invited)
- Local watershed management groups
- County Water Resource Boards
- Tribal representatives

The group then discussed the timeline for the Planning Team's deliverables and decisions. The group also agreed that prioritization of watersheds should be a one of the first elements addressed by the NDDoH in the strategy. It was the consensus that the NDDoH will develop a draft outline (i.e, framework document) of North Dakota's Nutrient Reduction Strategy based on the day's discussions. It was also the consensus that this outline/framework would provide additional detail on options for the watershed/waterbody prioritization element. Mr. Ell said he would try and have a draft completed by mid-January. The Planning Team will review the outline/framework and then will decide if it will be necessary to hold another Planning Team meeting. The Planning Team also suggested that NDDoH develop topic sub-groups, or workgroups, to focus on more specific goals and issues.

There was a brief discussion about North Dakota's factsheet and edits were provided by Planning Team members. Mr. Ell thanked everyone for attending and promised to be in touch with the meeting materials and meeting summary.