

A Proposal for a New Approach to Nutrient Management

For review at NMAC meeting, March 21, 2005

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For consideration by: NMAC, OMAF, MOE and OFEC

A). Introduction

The following text outlines the core principals of an alternative approach to the development and implementation of the Nutrient Management Act (NMA) in light of a series of events that have transpired since the NMAC committee began its work. The objective of the proposal is to provide an outline of a slightly modified framework for several aspects of the NMA that could serve as a starting point for discussions by NMAC, with the specific focus on overall integration of Source Water Protection (SWP) with the NMA.

Six members of the NMAC were cross-appointed to one or the other of the Provincial Source Water Protection Advisory Committees (IP and TEC). This proposal has been primarily developed by three members of NMAC who also sat on one or the other of the province's source protection committees. In addition, these three members played various roles in the events following Walkerton and the subsequent Inquiry, and two of these also sat on the original provincial source protection advisory committee.

B). Motivation

1). Need to integrate nutrient management with source protection:

The provincial advisory committee Source Protection reports of the Implementation Committee and Technical Experts Committee were presented to the Minister of the Environment on November 30, 2004 and public consultation on those reports through the EBR has just concluded. Both reports contain recommendations regarding integration of source protection, nutrient management and farm water protection. The regulatory framework for Source Water Protection (SWP) is currently being constructed by the MOE and is anticipated to become active prior to the completion of all components of the Nutrient Management Act (NMA). In some cases, regulations within the Source Water Protection legislation may supersede those of the NMA. As such, it has become critical for NMAC to ensure that any recommendations on the structure and content of the NMA consider the overriding implications of Source Water Protection so that both legislations and their implementing protocols are integrated as completely as possible. This is required in order to:

- 1). Ensure that the highest priority threats to water sources as a result of nutrient management activities are addressed in a timely fashion.
- 2). Provide clarity of objectives and enhanced understanding to the agricultural and other nutrient management related communities, which will simplify both compliance and implementation.
- 3). Develop a single, unified approach considering all relevant legislation.
- 4). Optimize any expenditures of public sector, NGO, and proponent funds targeted for these initiatives.
- 5). And, most importantly, maximize the protection of water resources for all Ontarians.

Prior to the release of the TEC and IP reports, it was impossible for NMAC to have a complete understanding of the influence that SWP will have on agricultural activity and the NMA specifically. Now that the information is available, there is a valuable opportunity to re-evaluate the overall direction and implementation of the NMA so that both pieces of legislation are more seamlessly integrated.

2). Need to determine phase-in of rest of farms under nutrient management:

At the November 29, 2004 meeting between the Provincial Nutrient Management Advisory Committee and Minister of Agriculture and Food, Steve Peters and Minister of Environment, Leona Dombrowsky, the Ministers requested the NMAC to consider the phase-in of other farms under the Nutrient Management Act in the context of Source Water Protection. Minister Peters indicated that the reports of the source protection Implementation Committee and the Technical Experts Committee would contain recommendations regarding agricultural activities including nutrient management and Farm Water Protection Plans and advised that he would like the Committee to revise their Terms of Reference to include phase-in of other farms in the context of source water protection. He indicated that it was important to coordinate any future phase-in of farms under SWP with the phase-in under the Nutrient Management Act, including moving forward with the NMAC recommendations on Phase One regulatory issues. (Minutes of Ministers Session with NMAC November 29, 2004)

These recent requests by the Ministers represent a significant modification to the original mandate of NMAC and provide additional justification to review and update the approach to developing the NMA.

3). Do we need a new approach?:

There is a desire by many of us within and beyond NMAC to ensure that we are collectively applying effort and resources to issues and measures regarding the long-term protection of Ontario's water resources that will provide significant, sustained

environmental and health benefits. There are also current financial pressures on the soon to be phased in farms including issues of the availability of promised funding. At the January 31, 2005 NMAC meeting, representatives of Ontario Federation of Agriculture, Ontario Farm Animal Council and Ontario Farm Environment Coalition sought support from other members of the NMAC with respect to uncertainties related to the structure of the NMA and its implementation. These specific concerns included:

- 1). Uncertainties regarding the implications and integration with SWP.
- 2). Incomplete understanding of the environmental benefits realized from the measures in place so far.
- 3). Lack of focus on the targeting of actual risk of specific agricultural activities within the current implementation plans.
- 4). Financial and technical uncertainties associated with a requirement for an interim state compliance without a comprehensive understanding of the complete regulatory framework of both SWP and NM.
- 5). Unknown availability of funding support and program structure, and its relation to the affected proponents.

This clear message from the agricultural stakeholders was indeed one of the major motivating factors in the preparation of this proposal.

4). Government Commitment:

Agriculture Minister Steve Peters in An Open Letter to Ontario's Farmers dated March 2, 2005, stated, "As the Premier told your farm leaders, Minister Dombrowsky and I have been working on ways to ensure that we can move forward in implementing the Nutrient Management plan in a *risk-based way* that neither places an unbearable burden on you nor compromises our commitment to safe, clean drinking water." <http://www.gov.on.ca/OMAFRA/english/infores/releases/2005/030205.html>

This has provided a clear message that the NMA needs to consider the actual on-farm risk associated with management of nutrients in recommending the implementation of any specific regulations.

C). Proposed New Approach to Nutrient Management

We propose that consideration should be given to a risk-based approach for both the regulatory components of the NMA and its overall implementation. Specifically, we suggest that:

a). evaluation of agricultural activities and compliance with Provincial regulation should be based on assessment of risk to both the aquatic environment and human health.

b). in addition to the core focus on the optimum management of nutrients, specific consideration be given to risks associated with pathogens and other human health issues.

The focus on a risk-based approach along with consideration of pathogen species in addition to nutrients would considerably improve the alignment between SWP and NM and would also enhance the overall objectives of protecting water resource quality. In addition, recent information from the USA provides insight into the actual threats associated with agricultural activities as related to drinking water supplies as outlined below.

The US EPA has found that “three pollutants (sedimentation, pathogens, and nutrients) are responsible for an estimated 40 percent of water quality impairments nationally”. www.epa.gov/waterscience/standards/strategy/fs.htm

An internal Ontario Water Works Association document indicates that fecal coliform bacteria and *E. coli* are present at virtually all times in water sources impacted by agriculture and/or domestic sewage discharges; other pathogens such as *Giardia* and *Campylobacter* are frequently present in heavily impacted watersheds; still others such as *Cryptosporidium* appear more frequently in association with seasonal events such as calving or in association with inadequately treated domestic sewage (as was the case in North Battleford); and others such as *E. coli O157:H7* and Noroviruses appear infrequently in localized settings. 100 types of human pathogenic viruses may be present in fecal-contaminated waters.

Pathogens and turbidity present the most difficulties to municipal treatment systems – for example, pathogens can pass through filters with less than .1 NTU turbidity demonstrating the need for additional treatment steps to ensure safe drinking water. While efforts are being made to optimize existing drinking water treatment processes and incorporate new technologies the importance of source water protection as an integral component in the overall production of safe drinking water cannot be understated.

Proposal Summary:

1. Based on a review of existing, contemporary science, develop a short list of priority agricultural activities that represent the highest risk to water resources, based on the above captioned “three pollutants” and are not site or farm size specific. For each priority activity on the list, recommended mitigating/reduction strategies should be implemented immediately on large farms (> 300NU) and over a reasonably short time line on all farms.

2. The short list should be developed by an ad hoc committee charged with prioritizing the main regulatory requirements / BMP’s that should be applied no matter what the site-specific risk is, how large the operation is or where the farm is located.

Examples to consider might include winter spreading, security and size of manure storage facilities, fertilizer application rates and timing based on crop requirements, set

backs from surface water and wells and the application on tile drained lands and thin over-burden over rock.

3. Choice of immediate priorities (universal list) should include pathogen as well as nutrient impacts in the context of a multi-barrier approach.

4. Integrate these into the >300 NU NMA protocol as the core elements that will be required for compliance in the short term.

5. Implement these for all farms soon after as they will not be dependant on the risk assessment work coming from Source Water Protection.

6. Focus the funding in the first round on the implementation of the universal list to ensure the highest risk issues are dealt with immediately.

7). Continue to work on the other NMA regulatory aspects within Phase 2 and 3 groupings. Implementation of any management activities that are not included in the Priority List may not be required uniformly across the province and may only be adopted in areas considered vulnerable or at risk from either environmental or human health perspectives based, for example in conjunction with Source Water Protection assessments. This may be where the Farm Water Protection Plan and the Environmental Farm Plan structures become useful tools.

Additional points:

- Nutrient management planning and source water planning to be integrated; one plan.
- Additional compliance only where sensitive issues exist (environmental or health), based on existence of these issues, not size of farm.
- The plans may be more focused on the high priority issues relevant to that farm.
- Impacts considered on a watershed basis with detailed guidelines provided for BMP's on all Phase 1, 2 and 3 issues and those issues already captured within the NMA. Mandatory compliance with these guidelines will depend on local risk level.

Simplified Diagram

Consider each of the requirements within the following schematic:

Regulatory Requirement / BMP – common everywhere	Large Farms do now	All farms do by		Other Best Management Practices – Guidelines for Now
Regulatory Requirement	Large Farms do x	All farms do x by	Certain Farms	

/ BMP – risk based	now if risk applies – determine criteria Large Farms do y later by ____ if risk applies – determine criteria – integrate with source protection	____ if risk applies – determine criteria All Farms do y by ____ if risk applies – determine criteria - integrate with source protection	– Requirements triggered by Source Water Protection Plan Mapping	
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Example (samples for illustration only, not necessarily the results of the review):

Regulatory Requirement / BMP – common everywhere No winter spreading Have 240 days manure storage	Large Farms do now (i.e. by July 2005) Large Farms do by December 2005	All farms do by ??July 2006 All farms do by?? for liquid manure All farms do by ?? for solid manure		Other Best Management Practices – Guidelines for Now
Regulatory Requirement / BMP – risk based No biosolids application No biosolids application in certain vulnerable areas	Large Farms do x now if risk applies – determine criteria: e.g. No biosolids application within certain distance or travel time of municipal well Large Farms do y later by ____ if risk applies – determine criteria – integrate with source protection e.g. No biosolids application in designated vulnerable areas within watershed as per source protection plan	All farms do x by ____ if risk applies – determine criteria e.g. No biosolids application with certain distance or travel time of municipal well All Farms do y by ____ if risk applies – determine criteria - integrate with source protection e.g. No biosolids application in designated vulnerable areas within watershed as per source protection plan	Certain farms – Requirements triggered by Source Water Protection Plan Mapping	