Nutrient Management & Source Protection

Overview for the Advisory Committee on Watershed-based Source Protection

Ontario

Purpose of Today's Presentation

- Brief overview of Nutrient Management Act implementation
- Brief overview of draft regulations
- Potential linkages to source protection

Background

- 1990s
  - Nitrate levels in rural groundwater increasing
  - Liquid manure spills into surface water
  - Public concern about water quality impairment, large livestock operations
  - Municipal by-laws to restrict building of large livestock operations restricting agriculture
- 2000
  - Task Force report recommends nutrient management regulatory scheme
  - Walkerton tragedy

Background cont'd

- 2000-2002
  - Consultation rounds on nutrient management
  - Clean Water Strategy
- 2002
  - O'Connor recognized NMA as important 1st step in improving rural water quality
  - NMA passed in June
  - Draft regulations released in August & December
- 2003
  - Consultation ongoing
  - April 2003 target for implementation
  - 5-year phase-in

Nutrient Management Principles

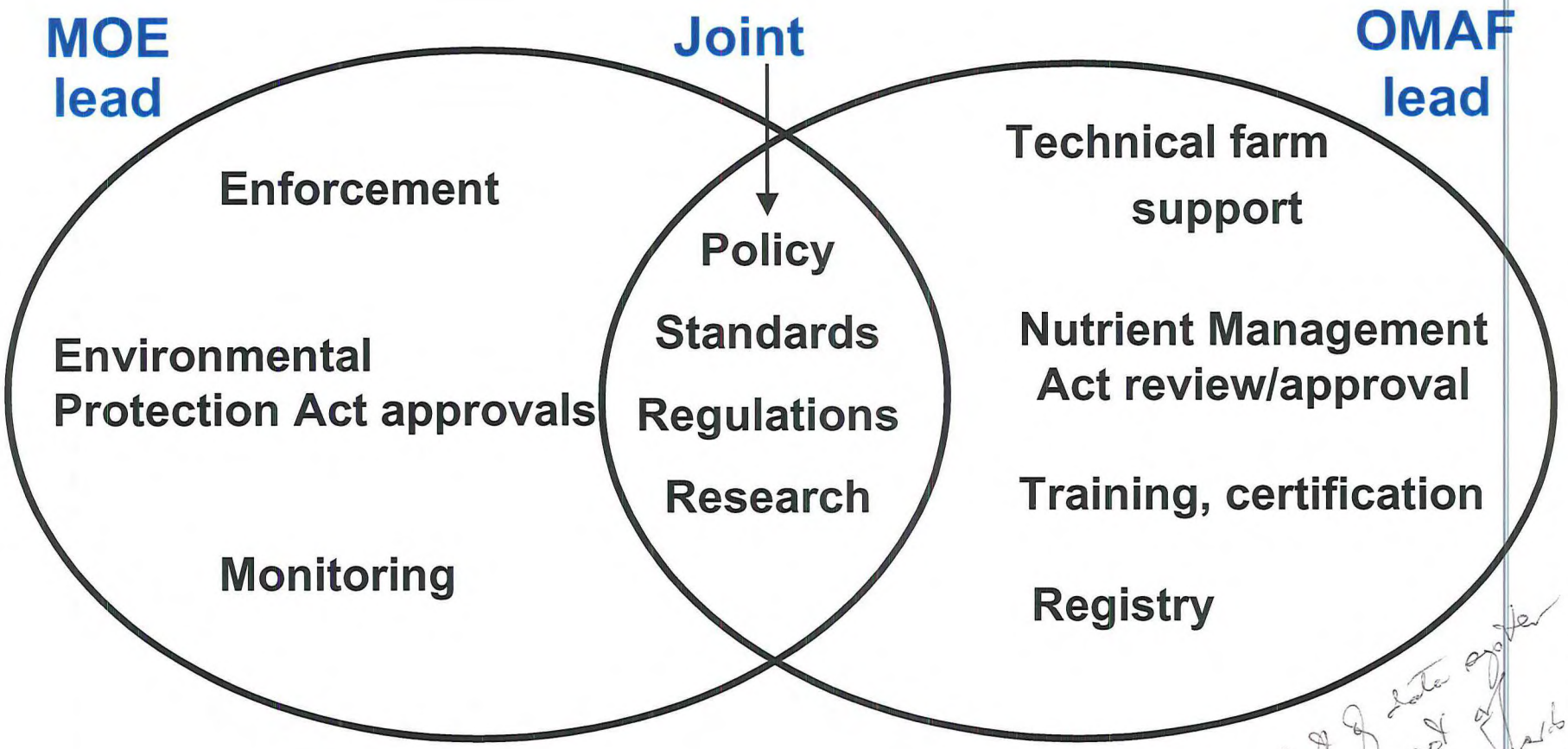
- Covers all nutrients applied to farmland, e.g. manure, biosolids, fertilizers
- Nutrients are a beneficial resource
- Science-based standards
- Supply nutrients according to annual crop needs
- Operations regulated according to risk
- Consistent province-wide standards

Nutrient Management Principles (cont'd)

- Flexibility to adapt to individual farm situations
- Strong provincial enforcement for violations of regulations
- Recognition of private & public benefits of nutrient management
  - — farmers should not bear all the costs
  - — Justice O'Connor Recommendation 16:

    "The Provincial Government ...should establish a system of cost-share incentives for water protection projects on farms"

MOE & OMAF Responsibilities

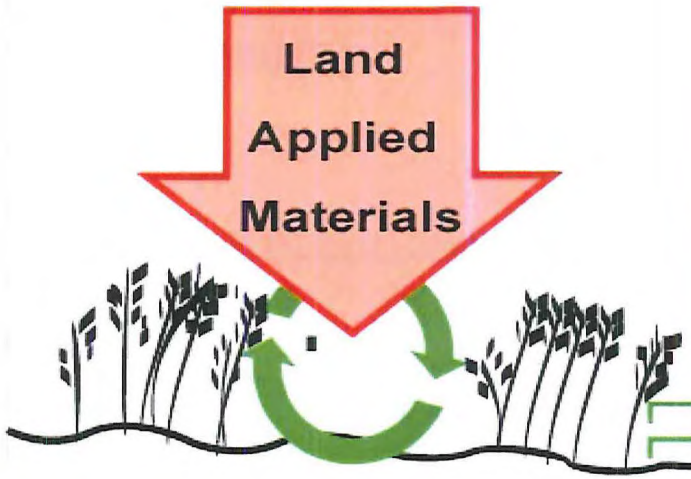


THE NUTRIENT MANAGEMENT PLAN

A science based tool identifying how manure, fertilizers, other nutrients, and existing soil fertility are effectively utilized by crops and sustained by the land in an environmentally responsible manner.

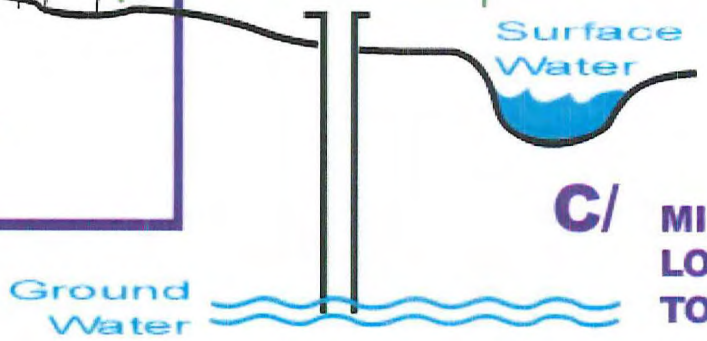
Matching A to B

A/ MATERIAL QUALITIES



B/ LAND CAPABILITY & OPTIMAL CROP YIELD

- ☑ Site Registry (geo-referenced data)
- ☑ Testing of Material Quality
- ☑ Pre-application Site Inventory (soil sampling , terrain analysis, sensitive features identification)
- ☑ Application Timing
- ☑ Application Rate / Technology
- ☑ Crop Rotation
- ☑ Minimum Distance Separation from sensitive features such as wells and waterbodies



C/ MINIMUM LOSSES TO WATER

Nutrient Management Strategies & Plans

- Content requirements for NMS & NMP
- Phase in according to categories of agricultural operations & municipal and industrial generators
- Plan determines appropriate livestock numbers
- Short version plan
- All farms have plan or strategy by 2008

Nine Categories of Operations

- Categories phased in between 2003 - 2008
- Requirements for new & expanding operations generally apply prior to compliance for existing operations in same category
- Categories 1 - 4 - Livestock operations & manure users
- Category 5 - Greenhouses & container nurseries
- Category 6 - Municipal and industrial generators & users (Certificate of Approval required)
- Category 7 - Agricultural operations using washwaters, vegetable & fruit culls
- Category 8 - Farms using commercial fertilizers only
- Category 9 - Intermediate operations (mushroom compost)

Approvals

1. Approval requirements for NMS and NMP

- OMAF approves every 5 years or when required
- MOE approves NMS for municipal & industrial generators plus MOE Certificate of Approval

2. OMAF Certificate of Operation

- Applies to large livestock farms generating manure
- Consists of approved NMS, NMP and Site Characterization

3. No NMP/NMS approval for

- smaller livestock, greenhouse, processing & mushroom operations
- cash crop operations using only commercial fertilizer outside 2 year capture zone for municipal wells

Storage Size

- Minimum 240 days storage for all new & expanding operations on liquid manure
- NMP determines storage requirements for all others
- In-field manure stockpiles limited to 60-120 days (with siting & management restrictions)

New Construction of Barns & New Storages

- Setbacks from sensitive features
- No new barns or new storages within 100m of municipal wells
- Monitoring for leakage
- Site suitability assessment
- Decommissioning inactive storages

Existing Storages

- Structural assessment required
  - By 2004 for storages in 2-year capture zones of municipal wells
  - All other storages phased in with requirement for NMP

Land Application of Nutrients

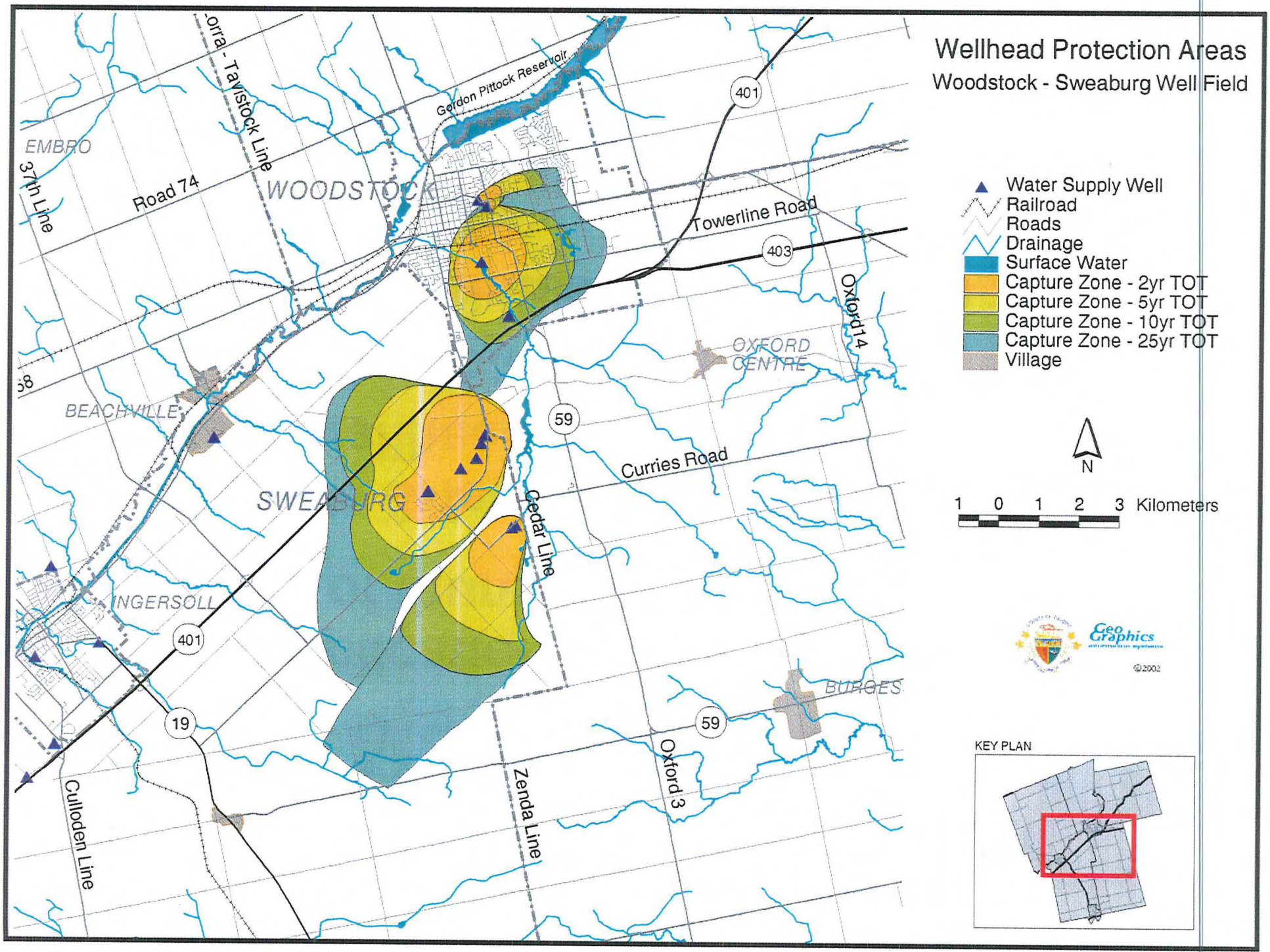
- Proposed to apply to all operations April 2003
- No manure application on saturated soil
- Setbacks from sensitive uses & features
- Application rates reduced based on soil type, slope & runoff, depth to bedrock
- Incorporation requirements except for perennial & winter wheat crops

Winter Spreading

- **Winter spreading is permitted except:**
  - **No manure or biosolids application on**
    - **Snow covered ground (>5cm)**
    - **Frozen ground (>2cm of ice in soil)**
- **Special requirements Dec 1- Mar 31**
  - **Wider setbacks from water, lower application rates & incorporation (except for winter wheat & forages)**

Land Application Near Municipal Wells

- No application of any nutrients within 100m of municipal wells
- Manure & fertilizer application in 2 year wellhead capture zone
  - lower application rates
  - specific times of application
  - pre-tillage
- No biosolids in 2 year capture zone


Wellhead Protection Areas
Woodstock - Sweaburg Well Field
Water Supply Well
Railroad
Roads
Drainage
Surface Water
Capture Zone - 2yr TOT
Capture Zone - 5yr TOT
Capture Zone - 10yr TOT
Capture Zone - 25yr TOT
Village
N
1 0 1 2 3 Kilometers
KEY PLAN
Gordon Pittock Reservoir
Dorra - Tavistock Line
EMBRO
37th Line
Road 74
WOODSTOCK
401
Towerline Road
403
Oxford 14
OXFORD CENTRE
BEACHVILLE
59
Curries Road
SWEABURG
Cedar Line
INGERSOLL
401
19
Culloden Line
Zenda Line
Oxford 3
59
BURGES
GeoGraphics
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Land Application Setbacks for Private Wells

	Commercial Fertilizer	Manure#	Biosolids#	Other Prescribed Materials
Drilled Wells *	3m	15m	15m	15m
Other Private Wells *	3m	30m	90m	30m

* Applies to both used & unused wells (all to be identified in NMPs)

Consistent with Regulation 903

Three Metre Buffers Along Watercourses

- Phase in buffers with NMP requirement
- In interim, 10m setback for solid manure & 20m for liquid manure & biosolids
- Watercourses do not include grassed waterways, furrows, roadside ditches or areas normally farmed

3 m. permanent vegetated buffer along stream

In interim greater setback distances until buffers established.

Training

- Training required for farmers & consultants, phased in over time
- OMAF training for plan preparation & land application
- Farmers can prepare own NMS & NMP
- Consultants can prepare NMS & NMP

Proposed Strategy for Five Year Phase Out of Septage

- Immediate ban on the land application of portable toilet waste
- No new Certificates of Approval (C of A)
- Current C of A would be phased out over 5 years
- Municipalities must prepare strategy for all untreated septage in their area
- Complete consultation & draft regulation under the Environmental Protection Act

Proposed Enhancements to MOE's Land Application Program (biosolids)

- All generators need a NMS & NMP by 2008
  - C of A still required
- All sites inspected by MOE prior to approval
- Applicant to consult with municipalities & submit results to MOE with C of A for land application
- MOE to notify municipality of decision on C of A
- Applicant required to notify MOE, municipality and public 1 week before spreading
- Quality & pathogen standards to apply

Next Steps

- December consultation meetings
- Additional consultation meetings on draft regulations, Jan 2003
- Finalization of regulations by April 2003
- Implement regulations, April 2003
- Consultation on further regulations, Spring 2003 (e.g. deadstock, livestock access to water)

Issues

- Integration of farm water protection plans & nutrient management
  - "Recommendation 13: All large or intensive farms, and all farms in areas designated as sensitive or high-risk by the applicable source protection plan, should be required to develop binding individual water protection plans consistent with the source protection plan."
- Time of travel/ capture zone coordination between NMA & source protection

Issues cont'd

- Timing
  - April 2003 with 5-year phase-in for NMA
  - Source protection phase-in?
    - agriculture
    - other industries, municipal
- Source protection to implement province-wide standards?
  - For capture zones? Land use restrictions? Municipal well siting?
  - Relation to NMA provincial standards