

MDS Information Session

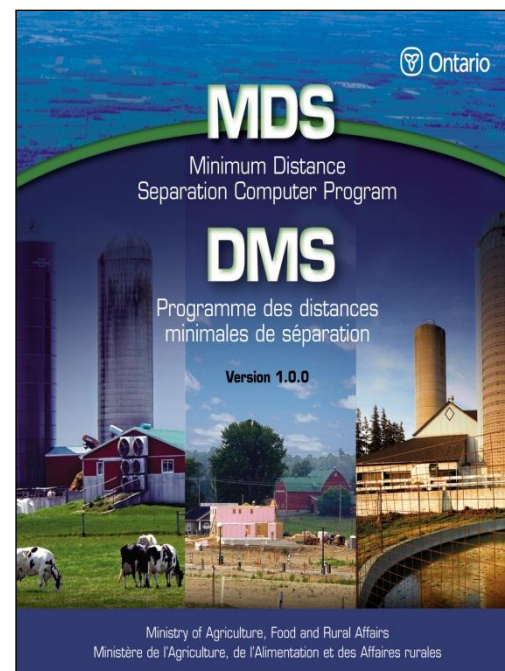
Kingston, Ontario

September, 2014

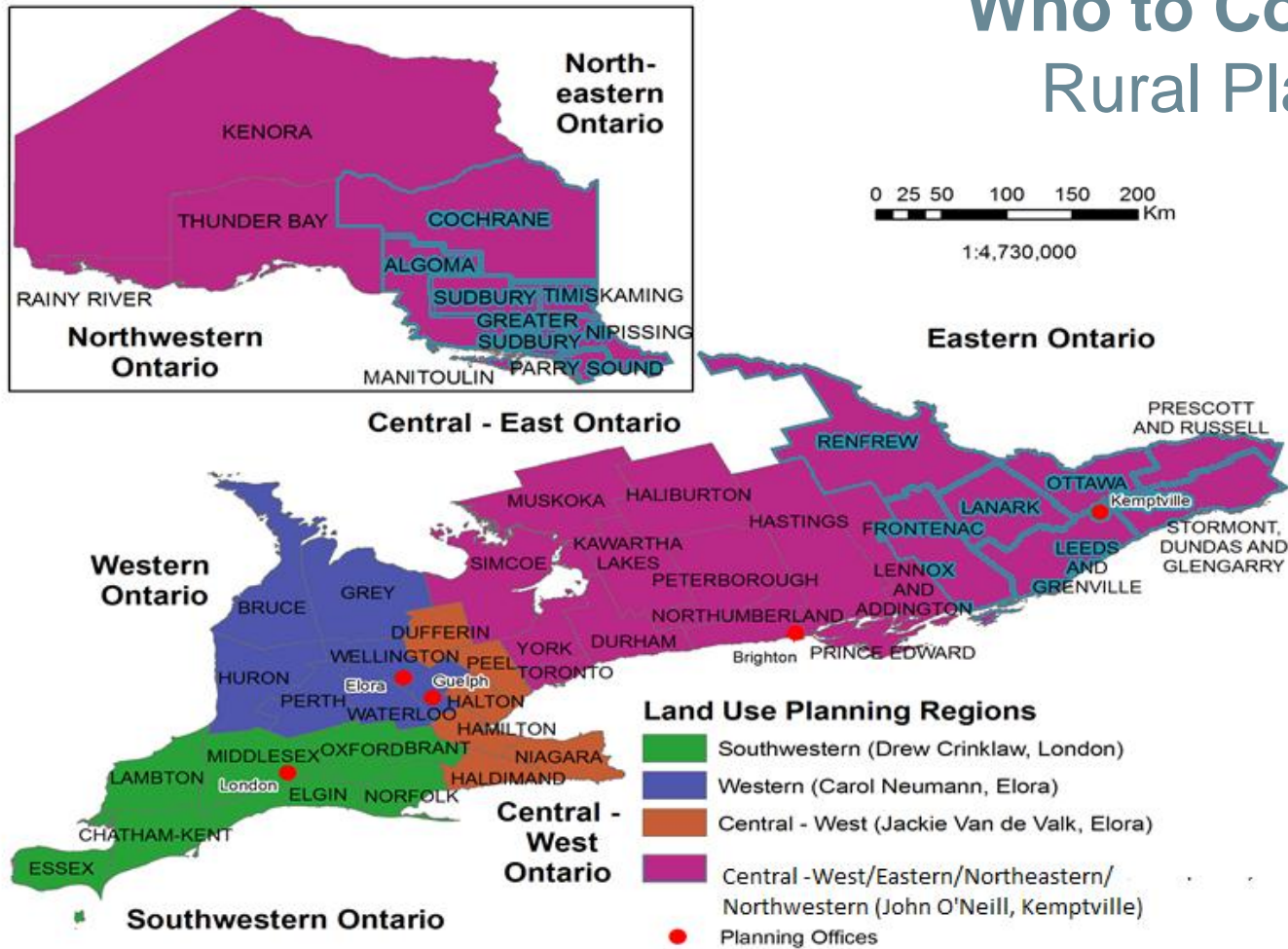
2014 Provincial Policy Statement

Under the *Planning Act*

Ontario.ca/PPS



Who to Contact: Rural Planners



MDS - Role of Municipalities

- Generally, municipalities are responsible for ensuring that MDS setbacks are met when reviewing land use planning applications (e.g. lot creation applications) or building permits.
- Municipalities may implement these requirements in different ways.
- As a best practice, municipal staff are strongly encouraged to specify the nature of the building permit for a livestock facility, rather than simply issuing a permit for a generic agricultural building, which may or may not include the housing of livestock.

How Does MDS Work?



MDS Basics

- Supplemented by Guideline booklet
 - The Minimum Distance Separation Formulae Implementation Guidelines (Publication 707)
- Reference is made throughout this presentation to concepts explained in greater detail in Publication 707 http://www.omafra.gov.on.ca/english/landuse/guide_p4.htm#i4

What is MDS?

- The Minimum Distance Separation Formulae (MDS) is a land use planning tool developed by OMAFRA
- Determines a setback between livestock facilities and other land uses, and visa-versa
- Separation distances vary according to a number of variables
- It is implemented through the land use planning system; and is identified in the Provincial Policy Statement
 - In turn, MDS is incorporated into municipal land use planning documents

Policy and Purpose of MDS

- Provincial Policy Statement (PPS, 2014) requires new or expanding livestock facilities and new land uses including the creation of lots to comply with the Minimum Distance Separation (MDS) formulae
- The objective of MDS formulae is to minimize nuisance complaints due to odour and reduce land use incompatibility:
 - MDS does not account for other nuisance issues such as noise, dust or flies
 - MDS does not account for other environmental factors
- MDS comprises of 2 separate, but related formulae

MDS I

- MDS I determines minimum setback distances between proposed new development and existing livestock facilities or permanent manure storages
- MDS I is applied to official plan amendments, zoning by-law amendments, lot creation applications, building permits
- MDS I is incorporated into municipal planning documents

MDS II

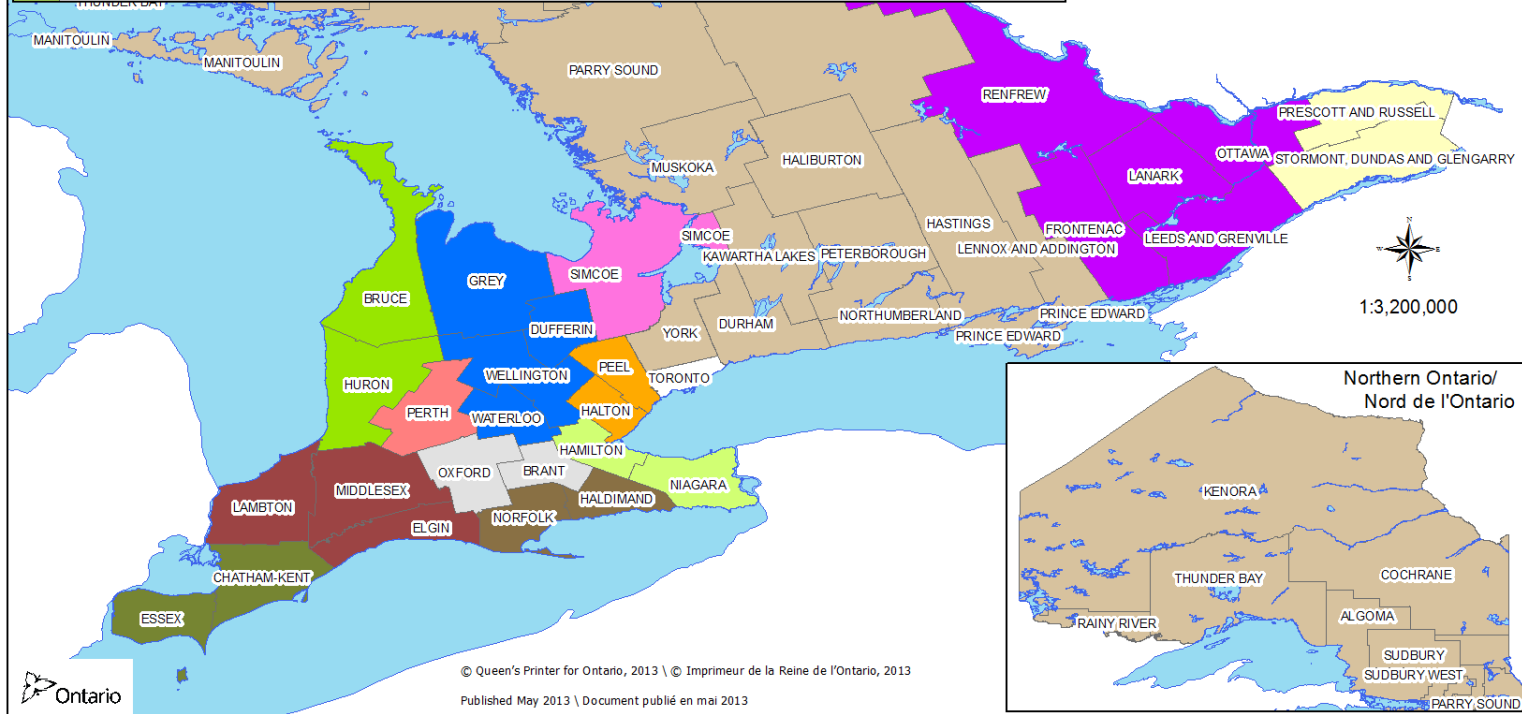
- MDS II determines minimum setback distances between proposed new or expanding livestock facilities and existing or approved development, lot lines and road allowances
- MDS II is applied at the time of a building permit application
- MDS II is also incorporated into municipal planning documents

OMAFRA Engineer Contacts

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|--|--|
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Applying MDS - General

- MDS does not deal with odour from manure application
- MDS is applied to livestock facilities
 - Barns and permanent manure storages
- MDS is not applied to:
 - Abattoirs, apiaries, assembly yards, fairgrounds, feed storages, field shade shelters, greenhouses, kennels, livestock facilities $<10 \text{ m}^2$ (108 ft^2) in floor area, machinery sheds, mushroom farms, pastures, hatcheries, slaughter houses, stockyards, or temporary field nutrient storage sites (as in NMA, 2002)



Applying MDS – Empty Facilities

- MDS I & II apply to empty livestock facilities, providing the buildings are:
 - Structurally sound
 - Reasonably capable of housing livestock or storing manure



Guidance material available at

http://www.omafra.gov.on.ca/english/landuse/mds_p9.htm

Applying MDS - Livestock occupied portions of livestock facilities

- MDS applied to livestock occupied portions of livestock facilities
- These areas exclude portions of livestock facilities where livestock are not normally present and substantial amounts of manure do not accumulate
 - Examples: feed bins, feed prep areas, field shade shelters, livestock assembly areas, livestock loading chutes, machinery sheds, milking centres, offices, riding arenas, silos, or washrooms.

MDS - 5 Factors

- MDS Formulae are based on 5 factors:
 - **Factor A** – Odour Potential Factor
 - (i.e. how ‘smelly’)
 - **Factor B** – Nutrient Units Factor
 - (i.e. how many livestock)
 - **Factor C** – Orderly Expansion Factor
 - (i.e. % increase)
 - **Factor D** – Manure or Material Form
 - (i.e. solid vs. liquid)
 - **Factor E** – Encroaching Land Use Factor
 - (i.e. what’s nearby)

Factor A – Odour Potential Factor

This factor has been developed to rate the odour potential of one livestock type in comparison to others (See Table 1, pg. 42 in Publication 707)

Some examples:

- Feeder Hogs 1.2
- Beef feedlot cattle 0.8
- Horses 0.7
- Broiler chickens 0.7

Factor B – Nutrient Units Factor

- This factor relates to the size of the operation. The larger the operation the larger the factor B value that is generated (See Table 2, pg. 46)
- The current MDS methodology has adopted the term Nutrient Units (NU), a 'dimensionless' number for comparing the size of various livestock production systems, based on a defined amount of crop nutrient produced in the manure
- In MDS II, Factor B is based on the capacity of a livestock facility (i.e. how many nutrient units of a certain type of livestock can be housed)

Factor B – Use of Tillable Hectares

- In MDS I, Factor B based on the greater of either:

Existing NU housing capacity of the livestock facility

OR

Potential NU housing capacity based on product of tillable hectares on lot x 7.5 NU/tillable ha (to maximum 300 NU)

- For Example:
 - 20 NU operation & 10 ha ($10 \times 7.5 = \underline{75}$ NU, > 20 NU)
 - 20 NU operation & 45 ha ($45 \times 7.5 = 337.5$ NU, but 300 NU max)
 - 300 NU operation & 10 ha ($10 \times 7.5 = 75$, < 300 NU)
 - 300 NU operation & 45 ha ($45 \times 7.5 = 337.5$ NU, use 300 NU)

Factor C – Orderly Expansion Factor

- Factor C recognizes that expansion of a livestock facility is a necessary and typical process for the economic development of most farm operations, and can reasonably be expected over time
 - For new operations, Factor C requires greater distances resulting in a building location that will allow most subsequent livestock buildings to be built within a reasonable building envelope
 - For existing, expanding operations, Factor C requires reduced distances on the premise that neighboring land use are familiar with odour being generated at this site compared to a site with no previous livestock or manure storage facilities

Factor C – Orderly Expansion Factor

- The utilization of this factor when calculating Building Base Distance 'F' has been modified in the current implementation guidelines
- To qualify for the reduced Factor C, there is a required 3-year waiting period between subsequent expansions that must be respected

Use of Factor C – Orderly Expansion Factor

- If no Nutrient Units added during last 3 years, then use the same method for calculating % increase as in MDS-1995
 - $(\text{proposed NU} \div \text{previous NU}) \times 100$
 - % increase then used to determine Factor C from Table 3
- For expansions occurring less than 3 years after issuance of the last building permit
 - A new method is used for calculating % increase
 - $(\text{proposed NU} + \text{NU added in the last 3 yrs}) \div \text{previous NU 3 yrs ago} \times 100$
 - % increase then used to determine Factor C from Table 3.

| | New Livestock Facility | Existing Livestock Facility (Constructed More than 3 Years ago) | Have Expanded In the Last 3 Years | |
|-------------------------------|---|--|---|--|
| | | | New with Expansions | Existing with Expansions |
| Size of Operation 4 Years Ago | N/A | 300 NU | N/A | 200 NU |
| Size of Operation 2 Years Ago | N/A | Same as above (no expansions) | 300 NU (NEW) | expansion of 150 NU |
| Proposed increase in NU | 500 NU (NEW) | expansion of 200NU | expansion of 200 NU | expansion of 150 NU |
| Total NU Capacity | 500 | 500 | 500 | 500 |
| Calculation | All first livestock facilities have a calculated factor of 1.14 | $(200/300) \times 100 = 67\%$ (use % in table 3) | Because first livestock facility was built less than three years ago factor = 1.14 | $[(150+150)/200] \times 100 = 150\%$ (use % in table 3) |
| Factor C = | 1.14 | 0.8332 | 1.14 | 0.9371 |

Factor D- Manure or Material Form Factor

- By definition there exists two possible manure or material types for storage, as shown in Table 1
 - Liquid manure/ material is any material with less than 18% dry matter content
 - Factor D = 0.8
 - Solid manure/material is anything between 18-100% dry matter content
 - Factor D = 0.7
- Generally, solid material is considered less odourous and so it receives a lesser value for Factor D

Guidance Material

http://www.omafra.gov.on.ca/english/landuse/mds_p8.htm

Factor E – Encroachment Factor

- This factor deals with adjoining land use to a proposed development. For MDS purposes there are two types of land use, Type A and Type B. The type is determined by the level of human density and the type of activity
- There are two values for Factor E (Table 4)
 - Type A Land Use E= 1.1
 - Type B Land Use E= 2.2

Factor E - Type A Land Uses

- Type A Land Uses are characterized by lower density of:
 - Human occupancy
 - Habitation
 - Activity
- This includes uses such as:
 - Recreational use – low intensity
 - Industrial use
 - Agricultural related use
 - Construction of a dwelling on a existing lot of record
 - Creation of up to three lots either by consent or plan of subdivision



Factor E - Type B Land Uses

- Type B Land Uses are characterized by higher density of:
 - Human occupancy
 - Habitation
 - Activity
- This includes uses, such as:
 - Commercial uses
 - Institutional uses
 - Recreational use – high intensity
 - Settlement areas



Examples of Recreational Land Uses

- **Low Intensity (Type A)**
- **High Intensity (Type B)**

- Natural Areas
- Walking trails



- Sports fields
- Trailer Parks
- Golf Courses
- Campgrounds

MDS I & II Formulae

- Calculating building base distance, 'F'
- For MDS I
 - 'F' = Factors A x B x D x E
 - Note that Factor C is not used in MDS I
- For MDS II
 - 'F' = Factors A x B x C x D
 - Note that Factor E is not used in MDS II



Building Base Distance

- Building Base Distance 'F' used in MDS I and II
 - In MDS I, 'F' is the setback new development must be from a livestock facility
 - IN MDS II, 'F' is the value from which MDS II setbacks are derived for the livestock facility from neighbour's dwellings, Type A Land Uses, Type B Land Uses, lot lines, and road allowances

Permanent Manure Storage Base Distance

- Permanent Manure Storage Base Distance, 'S' is used in both MDS I and II
- The value of 'S' is obtained by using the value of 'F' in Table 6 on the left hand column and selecting the manure storage type from the four possible columns
- Final 'S' distance is based on relative amount of odour that storage type will produce

Application of MDS After a Catastrophe

- Municipalities have the option to not apply MDS
 - After a catastrophe that destroys part or all of a dwelling, or
 - A catastrophe that destroys part or all of a livestock facility
- Dwelling or livestock facility may be no closer to surrounding development than before
- However, if rebuilding results in higher values for Factor A, B and/or D than before, for livestock facility, MDS II applies

Non-application of MDS to accessory structures

- MDS I & II are not applied to buildings & structures *accessory* to a dwelling, such as decks, garages, gazebos, greenhouses, outbuildings, picnic areas, patios, or sheds



MDS Review

- The current MDS Formulae took effect Jan. 1, 2007.
- The document included a commitment to review every 5 years
- Overall the current MDS formulae appears to be working relatively well and major changes are not envisioned

Areas Considered for Revision/Improvement

- 1) Clarify when, where, and how MDS is to be applied
- 2) Further clarification about what NOT intended to apply to
- 3) Where flexibility exists, make apply or non apply as the standard unless otherwise stated in local planning documents
- 4) With respect to lot creation... clarify that applied to severed and retained lot as well as types of consents not applicable
- 5) OPA's, ZBA's etc.... That may apply if convert to a higher intensity use
- 6) More supports and clarification embedded in single document as opposed to multiple

Other Highlights

1. Modify tillable hectares with new methodology
2. Further fixed distances for AD's and digestate storage
3. New definitions
4. New web-based software



Comments & Questions?