

# **The Municipality of Kincardine**

707 Queen Street

Kincardine, Ontario

N2Z 1Z9

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**Nutrient Management Land Use for the Municipality of Kincardine**

**Final Report**

**8 May, 2000**

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# Final Report

## Document 5

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## Preamble

Within many rural and agricultural communities there is the belief that the continued intensification of agriculture has degraded and will continue to degrade the rural environment. This concern over the impact of agriculture on the environment is occurring at a time when there are continuing shifts in the composition and aspirations of the rural community. For issues such as the siting of intensive livestock facilities there is increasingly a view that the broader community has an interest in where and how these facilities are established. At the same time there is a need to ensure that regulations are fair, and adequately protect the interest of the farm community and individual farmers. If there is not an appropriate balance between agriculture, the environment and community interests, there is the risk of two resulting extremes. At one extreme, if there is a failure to recognize legitimate community interests, intensive livestock operations will be established with a minimum of community involvement and regulation so that over time farmers are likely to face increasing harassment and corresponding legal action over issues related to air and water contamination. At the other extreme, if society is over zealous in regulating the livestock sector there is a risk of a stifled and non-competitive agricultural industry resulting in shifts in production from one geographic area to another (with a corresponding shift in employment and economic activity). Part of the challenge for policy makers therefore, in responding to the environmental impacts of livestock production on the rural community, is to develop an approach to the siting of intensive livestock facilities that strikes a fair and effective balance between agriculture, the environment and community.

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## Introduction

In Canada 60% of hog production, 74% of poultry production and 78% of milk production occurs in the provinces of British Columbia, Ontario and Quebec. Within these areas there are further pockets of concentration, with growth, reorganization and consolidation occurring in the hog, dairy and poultry sector resulting in the establishment of larger more intensive operations. This

change reflects an increasing emphasis on corporate scale agriculture, economies of scale, the introduction of new technologies, expanding markets, vertical integration (including the involvement of feed and slaughter companies), and an increasingly competitive marketplace driven by a global economy.

Manure has been a by-product of livestock production since the first animals were domesticated. Depending on the operator, this manure has been either a waste to be disposed of in the cheapest, easiest possible manner, or a valuable resource for crop production. In either case, the manure has usually ended up being spread on the farmer's fields.

The expansion of the livestock industry, and particularly the swine industry, in the County of Bruce in general and the Municipality of Kincardine, (formerly Township of Kincardine-Bruce-Tiverton), in particular has raised significant concerns regarding the potential impact on land, water and air resources.

Putting this in perspective, Bruce County is still the largest cattle producer within the 20 counties examined in Southern and South Western Ontario. Comparing the same counties for pig producers, Bruce County is considered about average.

Residents appear to be 'accommodating' in terms of current agricultural operations but significant concerns have been brought forward to municipal Council by area residents over the introduction of 'factory farming' or intensive livestock operations to the municipality. These concerns have come from both farm and non-farm, rural and urban residents. While odour from intensive livestock operations is a significant issue and the reason for many complaints, the potential impact of manure on water resources is also a major concern.

In response to continued public concerns over the expansion/development of intensive livestock operations, municipal Council has undertaken the following:

- development of a Nutrient Management By-law which requires the preparation and filing with the Municipality of a nutrient management plan and associated documents.
- adoption and incorporation of the Provincial Minimum Distance Separation formulae into the Comprehensive Zoning By-laws for the former Townships of Bruce and Kincardine.

The Nutrient Management By-law 1999-73 underwent an Amendment (By-law 1999-102 also found in Appendix A) on 25 August, 1999.

While the above actions are in keeping with responses in other municipalities across the province Council has been under increasing pressure to 'do more' to address the intensive livestock expansion issue.

In order to address this issue further Council passed an Interim Control By-law under Section 38 of the Planning Act (By-law 1999-109 also found in Appendix A) on 8 September, 1999 and commissioned a 'planning study' to investigate the intensive livestock issue in detail. Two additional Amendments were passed (By-laws 1999-112 and 1999-113 also found in Appendix A) both on 22 September, 1999, to amend issues in the Nutrient Management By-law and the Interim Control By-law respectively.

While the municipality recognizes that the hog industry expansion has raised numerous concerns, it should be noted that the issues raised at local council are also directed at agricultural operations in general. The potential for pollution of the air and water exists with all farms, both large and small and also cash crop and livestock. Even if there were no intensive agricultural operations being built, the underlying issues would still remain and therefore should be addressed in a comprehensive manner.

Council then issued a 'Terms of Reference' prepared by the County of Bruce Planning and Economic Development Department to provide prospective consultants/bidders with guidance on the issues which must be explored in the planning study to be conducted.

The County of Bruce Planning and Economic Development Department responded to the competition, with a "Proposal for Nutrient Management Land Use Policies" which outlined a study to address the nine issues which had been identified in the "Terms of Reference". Those nine issues are:

- What role should agriculture play in Municipality of Kincardine?
- Should intensive livestock operations be part of the Municipality of Kincardine community?
- If so, what restrictions should be place on intensive livestock operations?
- What role should the provincial/county/municipal governments play in regulating agriculture in general, and intensive livestock operations in general?
- What role should the public play in the review of proposed intensive livestock operations and nutrient management plans?
- Should there be a process to handle complaints regarding agricultural operations?
- How should these complaints be handled?
- What evaluative 'models' are available to assist in planning for agriculture and the environment?
- What technologies are available to address odour problems and/or manure volumes?

The County of Bruce Planning and Economic Development Department was successful with their proposal was been contracted by Municipality of Kincardine to conduct the study on their behalf. The County of Bruce Planning and Economic Development

Department retained professional planner on contract to conduct the study.

**The ultimate goal of this study was to provide the Municipality of Kincardine with recommendations regarding the appropriate manner in which to address animal agriculture in general and nutrient management issues in particular.**

The study was conducted in four phases:

1. Establish a Municipality of Kincardine Community Vision
2. Develop Goals and Objectives consistent with the Vision
3. Develop Action Item(s) to implement the Goals and Objectives, and
4. Present Recommendations and Implementation Plan

### **Community Open House and Vision Session**

*Phase 1: Establish Municipality of Kincardine (formerly Kincardine-Bruce-Tiverton) Community Vision and Goal*, saw the planning staff meet with Council and Staff in order to introduce the study staff to Council and to provide Council with the details of the study process.

In this Phase of the work the planning staff collected relevant background information and prepared for the first Open House/Vision Session. The community was asked to participate in this Open House/Vision Session, of which the focus was to:

1. Present relevant background information to the community
2. Confirm the issues in the community regarding both agriculture and nutrient management
3. Produce a community vision for agriculture in the municipality, and
4. Examine appropriate ways and means of implementing this vision

The Open House/Visioning Exercise was conducted in two parts. During the first half of the session, a series of presentations were given by industry representatives. The presentations covered factual information relevant to the nine issues Council had identified in the "Terms of Reference". The speakers making presentations were:

Pat Kuntz - Ontario Ministry of Agriculture, Food and Rural Affairs  
Chris Brown - Ontario Ministry of Agriculture, Food and Rural Affairs  
Murray Blackie - Ontario Ministry of Environment  
David Smith - County of Bruce Planning and Economic Development Department  
Sam Bradshaw - Ontario Pork Producers Marketing Board  
Paul Bennett-Chairman Municipality of Kincardine Peer Review Committee, and  
Wayne Caldwell - Huron County Planning Department

The second half of the evening was conducted in a "work shop" style session, where participants were asked to answer a set of questions which focussed on addressing the nine issues Council had identified in the "Terms of Reference". A reporting session was held in the last half hour of the work shop which summarized the responses to the questions.

As per *Phase 2: Develop Goals & Objectives consistent with the Vision*, of the project, six community members were identified from a list of names solicited during Open House attendees, to sit on a Steering Committee. The following 6 community representatives were contacted and agreed to sit on the Steering Committee

Murray Clark - elected chair Paul Bennett  
Steve Eby Norm Annets  
Barry Ribey Tom Fritz

The Steering Committee reviewed the information collected at the Open House/Vision Session and produced the Municipality of Kincardine community vision statement:

Agriculture plays a major role in the Municipality of Kincardine from an economic perspective, a cultural perspective and a community perspective. The Vision for agriculture in the Municipality of Kincardine is to be both diverse in the many types of agricultural activities found in the Municipality of Kincardine while being strong economically and in character. While promoting the "family farm" culture, both intensive and small scale operations, the agricultural community in the Municipality of Kincardine remains pro-active in adopting appropriate advances in agricultural methods, practices and technology, providing they are environmentally sound. The agricultural community in the Municipality of Kincardine enjoys and promotes a positive and mutually beneficial relationship with the rural (non-farm) and urban residents of both the Municipality of Kincardine and the County of Bruce as a whole.

The Steering Committee then turned their attention to preparing a set of Objectives and Action Items consistent with the Vision for

agriculture in the municipality.

*Phase 3: Develop Action Item(s) to implement Objectives.*, During this phase of the project, the Steering Committee worked collectively to prepare a draft Action Report. This report was presented to the community by the Steering Committee at an Open House. The second Open House was designed to present and solicit opinion on the draft Action Report, and recommendations to improve that report.

The Second Open House consisted of a 'formal' presentation of the draft Action Report and a general discussion which allowed the attendees to make comment and ask questions. Information collected at this public forum, was incorporated into the Action Report

## **Final Report**

This final report addresses the requirements of *Phase 4: Present Recommendations & Implement Plan*, by clearly identifying the recommendations, action items and related courses of action to address the nine issues identified in the Terms of Reference. The appropriate by-laws and policies with the required amendments, have been incorporated into this report in order to focus Council's direction when implementing the recommendations of this Report.

A resounding message heard from the Public during the course of this project was a call to require all intensive livestock operations and specifically swine related operations to undertake an "Environmental Impact Assessment". The reality to this; is a lack of legislation to enforce such a requirement on the agricultural community. However, in light of this, the following report "Nutrient Management Land Use for the Municipality of Kincardine" has been prepared with the consideration of environmental impact assessment planning and management procedures. In other words the recommendations in this report for changes to the present Nutrient Management Plan By-Law 1999-73, complaints process, enforcement, and the use of new technology reflect the spirit of the Environmental Impact Assessment planning process.

The changes identified in this report reflect the specific recommendations stated in Document 4 "Kincardine Bruce Tiverton Nutrient Management Project, Goals, Objectives and Actions". A copy of Document 4 has been attached as an Appendix to this report for reference.

Section 1 of this report, is a set of recommendations for Council to address within the next 9 months. The recommendations reflect issues 1 through 9, identified in the project Terms of Reference. This set of recommendations are those points which are better addressed by Council outside the confines of the existing or amended Nutrient Management Planning By-Laws. Further this set of recommendations will allow Council to define and establish a set of long term goals with respect to Nutrient Management Planning and environmental protection for the Municipality of Kincardine.

Section 2: Recommended Changes to By-Law 1999-73, identifies the specific changes to the By-Law recommended by the Steering Committee, which in turn, reflect the information collected during the study. Proposed changes to the By-Law have been highlighted with bolded, italicized, "Times New Roman" font for easy identification.

Section 3, Addressing Complaints: Developing a Response Process, addresses Issue 7, identified in the project Terms of Reference - "How should complaints be handled".

Section 4, Evaluative Models: Planning for Agriculture and the Environment, addresses Issue 8, identified in the project Terms of Reference - "What evaluative models are available to assist in planning for agriculture and the environment"?

Section 5, Alternative Technology: Improving Agricultural Waste Management, addresses Issue 9, identified in the project Terms of Reference - "What technologies are available to address odour problems and /or manure volumes"?

### **Section 6, Good Neighbour Policy**

The Good Neighbour Policy was developed in response to concerns within the agricultural and rural community. These concerns centred on manure spreading practices, odour, liquid manure storage, potential environmental impacts and water conservation.

### **Section 7, Literature Review**

The Literature Review is a bibliography of all resources collected and reviewed during this project. The intent is to create a Nutrient Management information resource that is available to the, Municipality of Kincardine Council and staff, Agricultural Advisory Committee, planning staff and residents of the Municipality.

## **Section 1: Recommendations to be Addressed by Council within 9 Months**

The Nutrient Management Planning process and supporting By-Law is considered fluid and can be amended if necessary. Therefore the Steering Committee recommends that Council act on and implement the action points in this report immediately and not wait for provincial policy direction. When the provincial direction is released and the Municipality of Kincardine, Nutrient

Management Planning process and/or supporting By-Law are found in conflict, they can be amended at that time.

**Recommendation 1:** The Committee **STRONGLY** recommends to council that the Nutrient Management By-Law consider intensive operations in terms of nutrients rather than in terms of numbers of animals/hectare, to include cash cropper and horticultural operations into the process. There are equivalent formula for this approach and would then include cash croppers into Nutrient Management Planning process.

The current Nutrient Management By-Law addresses nutrient as manure only. It is recommended that this term be changed to reflect a much larger definition to include not only manure, but commercial fertilizer, bio-solids (sewage sludge), leguminous crops and plow down crops.

The term "intensive livestock" is not accurate and therefore not acceptable. A proposed term, which better describes the management of nutrients would be "Nutrient Manager", or "Nutrient Management Operator".

Given that: 150 animal units produce approximately 10,000Kg/yr of Nitrogen (1.5 animal units/acre produces more than 100kg/yr of Nitrogen), then nutrient managers or operators managing more than 10,000Kg of Nitrogen per year or applying greater than 80Kg per acre should be required to complete a Nutrient Management Plan and file the plan with the municipality. Those operators applying 3,300 - 10,000 Kg/yr should use a self-directed plan as per the by-law.

**Recommendation 2:** The Committee recommends that Council hire or train a staff person to properly address enforcement of this by-law (ie train the by-law enforcement officer and building inspection official on NMP enforcement).

**Recommendation 3:** It was identified that the MDSII formula should be examined, addressing the issue for the need for changes to the formula which will enable it to be applied consistently. It is recommended that council lobby the province for changes, to improve the MDSII.

**Recommendation 4:** The Peer Review Committee recommends that the OMAFRA checklist be used as a model to develop a Municipality of Kincardine specific checklist for the Nutrient Management Plan applications submitted to the municipality. Using this checklist would ensure that all the plans will be laid out the same, be understandable and straight forward for review.

**Recommendation 5:** From a planning perspective it is recommended that Council review and revise where required the A2 (restricted rural) zoning designation along the lakeshore and around hamlets and urban areas. This is in response to demands from the community to control farming practices near the lake and urban areas. Proposed distances are to be drafted by the County planning staff, presented to the public at an open house and public meeting, and adopted by Council through the re-zoning process.

**Recommendation 6:** A standardized application kit should be provided to all applicants wishing to submit a Nutrient Management Plan. This should include all the necessary forms, the good neighbour policy and change of plan forms (to allow for a NMP change within the 3yr period). All plans must have the pages numbered from front to back for clarity. The layout of information should be by field for the full three years of the plan instead of lumping all the fields together for each year.

**Recommendation 7:** The Committee recommends that Council update the hazard mapping for the rural areas to protect sensitive areas from manure spreading, building and development.

**Recommendation 8:** The Committee recommends that the "Offences" section of the Nutrient Management Plan By-Law should have short form wording under the provincial offences act so the offender can be charged when in violation of the Nutrient Management Plan By-Law, should he/she be found knowingly and willfully negligent.

The Committee recommends that Council seek legal advice regarding the use of "short form procedures", their effectiveness and support of the process.

The investigation must follow due process, due diligence and rules of evidence etc., and the use of a formalized record keeping process to be put in place. Further, the operator if found negligent should assume the costs incurred for the investigation process.

**Recommendation 9:** That section 3.10 of the Nutrient Management By-Law be reviewed in 12 months to assess whether the \$100.00 complaint fee is warranted; having an effect in reducing frivolous complaints or simply of no use at all. At that time the Agricultural Advisory Committee will make appropriate recommendations to Council.

**Recommendation 10:** It is recommend that Council publish a contact list for different types of complaints that may arise with intensive livestock operations of any discipline.

**Recommendation 11:** The Steering Committee recommends that Council make the Nutrient Management Plan process more public. Plans should be made available to the public. Should a community member wish to receive a copy of a relevant document the request should be made to the Agricultural Advisory Committee. There would be a cost to exercise this request which is to be calculated and assigned by Council. It is possible that the drawings submitted with the application are not subject to "Freedom of Information" and could be removed when a request is made.

**Recommendation 12:** Any amendments to the nutrient management by-law should be referred to the Agricultural Advisory

Committee for comment.

**Recommendation 13:** The Steering Committee recommends that appropriate water conservation and management, practices are promoted and used. It is further recommended that water conservation and quality practices in agriculture be promoted through a form of incentive (to be identified by Council).

**Recommendation 14:** It is recommended that members of the Agriculture Advisory Committee/Peer Review Committee receive Alternative Dispute Resolution/Conflict Resolution Training at the expense of the Municipality of Kincardine.

**Recommendation 15:** Where By-Law 1999-73 states in Section 3.1 "*No person shall use any land, or erect, alter or use any livestock facility or part thereof within the limits of the Municipality of Kincardine without an approved Nutrient Management Plan or Environmental Farm Plan (where applicable), regardless of the size or scope of the facility*". This requirement is to be implemented through a phased approach. Upon acceptance of this amended by-law, all intensive operations will be subject to the by-law and all others must be in conformity by Dec 2001).

**Recommendation 16:** It is recommended that Council promote the Environmental Farm Plan through the use of educational vehicles such as municipally funded workshops.

**Section 2: Recommended Changes to By-Law 1999-73**

# BY-LAW

BY-LAW NO. 2000-??

[Redacted Title]

A BY-LAW TO REGULATE LIVESTOCK FACILITIES AND MANURE MANAGEMENT IN THE MUNICIPALITY OF KINCARDINE

[Redacted Preamble]

WHEREAS the Council of the

Corporation of the Municipality of Kincardine

deems it necessary in the public interest to regulate manure pits and livestock facilities;

**AND WHEREAS**, pursuant to Section 210, Par. 144, of The Municipal Act, R.S.O., 1990, as amended from time to time, by-laws may be enacted by local municipal Councils to regulate the location, erection and use of manure pits in a local municipality;

**NOW THEREFORE**, The Council of the Corporation of The Municipality of Kincardine ENACTS as follows:

**SECTION 1.0 - SCOPE**

This by-law shall apply to livestock operations deemed to be intensive, as defined in Sections 2.2 & 5.4 of this by-law, within the limits of the Corporation of the Municipality of Kincardine.

**SECTION 2.0 - DEFINITIONS**

For the purpose of this by-law the definitions and interpretation given in this section shall govern:

2.1 **Agricultural use, General** means general farming and without limiting the generality of the foregoing shall include such uses as the general cultivation of land and the associated production, conditioning, processing and storing of field crops, vegetables, fruit, horticultural crops and nursery stock and the selling of such produced on the premises, the breeding and care of livestock, poultry, fur-bearing animals and bees, and the selling of such stock or the product of such stock raised on the premises, and the management of forest, and the sale of forest products, including fuel wood, pulp wood, timber, Christmas trees, and maple products, and includes a farm dwelling and accessory buildings and uses.

2.2 **Agricultural Use, Intensive** means the raising of livestock and *includes livestock and manure storage facilities*, land base and accessory

buildings and uses. An intensive livestock operation, for the purpose of this section is defined as *exceeding 150 animal units*.

2.3 **Alter** shall mean any alteration in a bearing wall or partition or column, beam, girder or other supporting area or volume of a building or structure. When used in reference to a lot, the word "alter" means to decrease the width, depth, or area of any required yards, setback, landscaped open space or parking area, or to change the location of any boundary of such lot with respect to a street or land, whether such alteration is made by conveyance or alienation of any portion of the said lot, or otherwise. The words "altered" and "alteration" shall have a corresponding meaning.

2.4 **Aquifer** means a geological formation containing a subterranean reservoir of groundwater capable of providing economic quantities of water to a well.

2.5 **Building** means a structure having a roof, supported by columns or walls and used for the shelter or accommodation of persons, animals, goods or chattels.

2.5.1. Temporary Building shall mean a building or structure intended for removal or demolition within a prescribed time not exceeding two years as set out in a building permit.

2.6. **Building By-law** means any building by-law within the meaning of the Ontario Building Code Act, 1997, and amended from time to time.

2.7 **Building Inspector** means the Chief Building Official or other employees of the Township for the time being charged with the duty of enforcing the provisions of the Building By-Law and the Ontario Building Code, which shall mean any by-law of the Township from time to time in force regulating the erection or alteration of buildings and structures, including the enforcement of the Livestock Facility and Manure Management By-Law.

2.8 **Code, National Farm Building (1995)** is a set of regulations for the design, construction, remodeling and evaluation of a wide variety of farm buildings other than living quarters. Contains recommendations designed to obtain safe and efficient performance and economy within such buildings.

2.9 **Code, Ontario Building** is a set of regulations prepared by the Ministry of Housing consisting of building requirements to minimize the risk of injury and property damage from structural failure and fire and health hazards.

2.10 **Corporation** means the Corporation of the Municipality of Kincardine.

2.11 **Council** means the Council of the Corporation of the Municipality of Kincardine.

2.12 **Dike** is an earthen embankment or dam surrounding the manure pit and normally composed of material excavated during the construction of the manure pit.

2.13 **Drain Buried** means any sub-surface conduit for receiving and or conveying water.

2.14 **Drain Open** means a conveyance for water which is bounded by visible bed and banks. It may be man made or natural.

2.15 **Dwelling** means a building, or part thereof, occupied or capable of being occupied as a home, residence or sleeping place by one or more persons.

2.16 **Dwelling, Farm** means a dwelling unit that is naturally and normally incidental and subordinate and exclusively used in conjunction with a farm and is situated on the same lot therewith.

2.17 **Erect** when used in this By-Law includes building, construction, reconstruction and relocation; and, without limiting the generality of the work, also includes;

- a. any preliminary physical operation, such as excavating, filling or draining at a proposed building site; altering any existing building or structure by an addition, enlargement or extension;
- b. any work for the doing of which a building permit is required under the Ontario Building code.

"Erected" -and "Erection" shall have a corresponding meaning.

2.18 **Existing** unless otherwise indicated, means existing on the date of passing of this by-law.

2.19 **Flood Plain** is the area of a river valley flooded as the result or a regional storm determined by consultation with S.V.C.A.

2.20 **Frontage** means the width of a lot measured along the street line.

2.21 **Grade, Finished** means the average elevation of the finished surface of the ground at ground level of a building or structure.

2.22 **Grassed Spillway** shall mean a shallow, seeded channel-way to divert flow away from any watercourse.

2.23 **Livestock** means fur bearing animals or any other domestic animal used for consumption. Also, any animal listed in section 2.24 of this by-law.

2.23.1 **Livestock Facility** means livestock barns where animals or poultry are housed, including beef feedlots, and the associated manure storage.



2.24 **Livestock Unit** means equivalent values for various types of animals and poultry based on manure production and production cycles as amended from time to time.

Animals per Factor "A"

Livestock Unit (Odour Potency)

BEEF 1 Beef Cow (note 1) (barn confinement) 0.7

1 Beef Cow (barn with yard) 0.8

2 Beef Feeders (barn confinement) 0.7

2 Beef Feeders (barn with yard) 0.8

CHICKEN 125 Caged Layers (manure stored in barn) 1.0

125 Caged Layers (daily manure removal) 0.8

125 Chicken Breeder Layers 0.8

200 Chicken Broiler/Roasters 0.65

500 Pullets (replacement layers) 0.7

DAIRY 1 Milking Cow (notes 1,2) (tie-stall) 0.65

1 Milking Cow (free-stall) 0.7

2 Dairy Heifers (barn confinement) 0.7

2 Dairy Heifers (barn with yard) 0.8

DUCK 100 Ducks 0.7

EMU 5 Emu 0.7

FOX 40 Adult Fox (note 4) 1.0

GOAT 4 Adult Goats (note 3) 0.7

10 Feeder Goats (>20 kg) 0.7

HORSE 1 Horse (note 3) 0.65

MINK 80 Mink (note 4) 1.0

OSTRICH 3 Ostrich 0.7

RABBIT 40 Adult Rabbits (note 4) 0.8

SHEEP 4 Adult Sheep (note 3) 0.7

10 Feeder lambs (>20 kg) 0.7

SWINE 5 Sows/Boars 1.0

4 Feeder Hogs (30-120 kg) 1.0

20 Weaners (4-30 kg) 1.0

TURKEY 50 Meat Turkeys (>10 kg) 0.7

75 Meat Turkey (5-10 kg) 0.7

75 Turkey Breeder Layers 0.8

100 Meat Turkeys (<5 kg) 0.7

500 Pullets (replacement 0.7 breeders)

VEAL 6 White Veal 1.0

3 Red Veal (<300 kg) 0.8

Notes: For all other animals/poultry use 1 livestock unit per 450 kg housed at one time (A=0.8)

1 - Includes calf to 150 kg

2 - A dairy/cow-calf farm usually has milking cows, heifers and calves. Multiply the number of milking/nursing cows by 1.5 to account for the followers when they are all kept on the same farm.

3 - Includes offspring until weaned

4 - Includes offspring to market size

5 - Multiply number of sows by 2.4 to determine the number of weaners

- 2.25 **Lot** shall mean a parcel of land, described in a registered deed or shown on a registered plan of subdivision including any of its parts which are subject to right-of-way or easement that is capable of being legally conveyed.
- 2.26. **Lot Line** means any boundary of a lot or the vertical projection thereof.
- 2.27 **Manure**, Livestock principally composed of livestock feces and urine, may include some bedding material and some diluted water.
- 2.28 **Manure, Liquid Livestock**, livestock manure which has a dry matter content, *equal to or less than* 12% by weight.
- 2.29 **Manure Pit**, for the purpose of this by-law, a manure pit shall mean an earthen, steel or concrete storage facility used for the storage of liquid manure.
- 2.30 **Manure Pit, Covered** is a manure pit with a roof or covering enclosing the surface area of the pit.
- 2.31 **Manure Pit, Open** is a manure pit open to the atmosphere with no roof or covering.
- 2.32 **Municipal Drain** shall mean a drainage works as defined by The Drainage Act, R.S.O. 1990 as amended from time to time.
- 2.33. **Municipality** shall mean The Corporation of the Municipality of Kincardine.
- 2.34 **Non-Complying** means a livestock facility and/or manure pit permitted by this by-law which does not meet the provisions required in this By-law.
- 2.35 **Non-Conforming** means a lawfully existing livestock facility and/or manure pit not permitted by the By-law.
- 2.36 **Nutrient Management Plan**, means a report that evaluates the relationship between the application of nutrients (manure), managing techniques, and land use (see Appendix "A").
- 2.36.1 Nutrient = manure, commercial fertilizer, biosolids, leguminous and plow down crops.
- 2.37 **Permitted** shall mean permitted by this By-law.
- 2.38 **Person** includes any individual, association, partnership, corporation, municipal corporation, agent or trustee and the heirs, executors or other legal representative of a person to whom the context can apply according to law.
- 2.39 **Renovation** means the repair and restoration of a livestock facility and/or manure pit to good condition within existing external walls and dikes but shall not include its replacement.
- 2.40 **Road Allowance** shall mean a municipally owned property used as a roadway or retained as a road right-of-way.
- 2.41 **Site Plan** shall mean a scaled drawing showing the relationship between a livestock facility and/or manure pit and neighbouring land uses including areas designated or zoned in a non-agricultural category; non-conforming uses; neighbour's residences; middle-of-the-road allowances and lot lines.
- 2.42 **Tillage Acres** means total area of land including pasture that can be cultivated.
- 2.43 **Use** shall mean the purpose for which any land, building, structure, or premises, or part thereof, is arranged, designed or intended to be used, or is or may be occupied or maintained and the words "used", "to use", and "uses" have a corresponding meaning.
- Unless the context otherwise requires, the expression "use" or "to use" in this by-law shall include anything done or permitted by the tenant or occupant of any land, building or structure, directly or indirectly or by or through any trustee, tenant, servant, or agent, acting with knowledge or consent of such owner or occupant, for the purpose of making use of said land, building or structure.
- 2.44 **Watercourse** mean a natural or man-made channel which carries water and includes streams, rivers, open drains and lakes, and includes watercourses with intermittent flow.
- 2.45 **Well** shall mean a dug or drilled hole made in the ground to locate or obtain ground water or to test or to obtain information in respect of groundwater or an aquifer, and includes a spring around or in which works are made or equipment is installed for collection or transmission of water and that is or is likely to be used as a source of water for human consumption.
- 2.46 **Agricultural Consultant** means a person with accreditation in the assessment of soils, manure and nutrient management.
- 2.47 **Guide to Agricultural Land Use** means a set of guidelines used to assist farmers in reducing the potential of their livestock operation to pollute air, soil and water, and to provide guidelines for the rational use of land in relation to the livestock industry.
- 2.48 **Peer Review Committee** shall be a pool of 8 or more interested citizens from different commodity groups. Three chosen members would constitute an investigational unit.

## **SECTION 3.0 - APPLICATION, ADMINISTRATION AND ENFORCEMENT:**

### **3.1 Application**

No person shall use any land, or erect, alter or use any *livestock* facility or part thereof within the limits of the Corporation of the Municipality of Kincardine except in conformity with the provisions of this by-law and with the Municipality zoning by-law.

***3.1.1 All facilities housing greater than or equal to 50 animal units or part thereof constructed within the limits of the Corporation of the Municipality of Kincardine will require an approved Nutrient Management Plan***

***3.1.2 No person shall use any land, or erect, alter or use any livestock facility or part thereof within the limits of the Corporation of the Municipality of Kincardine without an approved Nutrient Management Plan or Environmental Farm Plan, regardless of the size or scope of the facility.***

***3.1.3 All livestock facilities housing less than 50 animal units will, (by Dec 2001) be required to complete an Environmental Farm Plan.***

### **3.2 Administration**

This by-law shall be administered and enforced by such person or persons as shall be appointed from time to time by by-law of the Corporation of the Municipality of Kincardine.

### **3.3 Inspection**

Any employee of the Municipality acting under the direction of the Council of the corporation, or any peace officer having jurisdiction in the Municipality, is hereby authorized to enter with prior notification between the hours of 8 o'clock a.m. and 6 o'clock p.m. any date but Sunday upon any property or premises or structure for the purpose of discharging his duties and obligations under this By-law or if there is reason to believe that the provisions of the By-law are not being complied with in whole or in part. The employee must adhere to the bio-security standards of the inspected farm operation.

### **3.4 Application for Permit**

No person shall erect, alter or use any agricultural or horticultural facility or part thereof within the limits of the Municipality of Kincardine, unless a permit has been issued, therefore, by the Building Official.

In addition to all the requirements of the Building By-law, the Ontario Building Code Act, 1992 as amended, and regulations thereto, or any other by-law, every applicant for a permit for a livestock facility shall file with this application a plan, in duplicate, drawn to scale, including the following:

3.4.1 Dimensions of the lot to be built upon or otherwise used;

3.4.2 The proposed type, location, and dimensions of the manure storage facility proposed for such lot and its distance relative to!

3.4.2.1. the lot lines;

3.4.2.2. the adjacent public road;

3.4.2.3 the nearest drilled, dug or communal well;

3.4.2.4. the nearest watercourse, pond, drainage ditch, lake, river, stream or water body, including intermittent flows;

3.4.2.5 the location of the nearest, field drainage tile; if a drainage tile is located underneath or immediately adjacent to the location of a liquid manure tank, then the drainage tile must be rerouted or capped.

3.4.2.6 the location of any area designated or zoned residential, recreational or institutional and has a location which falls within the Provincial and Municipal minimum Distance Separation II (MDS II) formula.

3.4.3 The location and dimensions of all existing and any proposed buildings or structures on such lot used for the purpose of breeding or caring for livestock, poultry or fur-bearing animals, or the storage of manure. Should any outlying buildings be considered for use in the future, they would be subject to a Nutrient Management Plan Amendment;

3.4.4 The location of all existing and proposed buildings or structures that have locations that fall within the Provincial and Municipal Minimum Distance Separation II (MDS II) formula of the proposed building, structure or use and the separation distances to, and existing use of those buildings and structures;

3.4.5 Type of livestock, poultry, or fur-bearing animals existing and proposed on such lot;

3.4.6 Numbers of livestock, poultry, or fur-bearing animals existing and proposed on such lot;

3.4.7 Type, dimensions, contouring for accidental overspill of liquid manure, and in the case of earthen storage cross-section of any excavation required, including the dike.

3.4.8 Tillable Acres of land made available, owned or by legal agreement, for manure disposal, along with 2 copies of such agreement; and the said agreement must make reference to a sound nutrient management plan.

3.4.9 A soils and hydrological report prepared by a competent person with expertise in this field of study shall be required in the

case of liquid earthen storage's, including certification that the standards set out in Section 7 of this By-law are satisfied.

### **3.5 Inspection**

*All aspects of construction for manure storage structures, including but not limited to design, excavation, material quality, and construction, shall be subject to 3<sup>rd</sup> Party inspection by an Engineer licensed by the Province of Ontario. Fees for the 3<sup>rd</sup> Party review will be the responsibility of the facility proponent.*

### **3.6 Issuance of Permit**

No permit shall be issued for a livestock facility and/or manure facility which does not conform with the provisions of this by-law. *This By-Law allows for a "phased approach" to enable the proponent to commence his/her farming operation as soon as practicably possible. For example, a proponent could commence use of a completed half of a barn while the remaining half is still under construction. Phasing will be agreed upon, on an individual site/Nutrient Management Plan basis, to be negotiated at the time of issuing the building permit. The Agricultural Advisory Committee has the responsibility of approving the phasing plan.*

### **3.7 Expiration of Permit**

A permit issued under this by-law may lapse after 12 months from the date of issuance unless the approved work is being seriously proceeded with.

### **3.8 Fees**

Fees shall be in accordance with the applicable Fee By-law.

### **3.9 Violation and Penalties:**

Every person who uses, erects or alters any agricultural or horticultural facility and/or manure pit facility in a manner contrary to any requirement of this by-law or who causes or permits such use, erection, or alteration or who violates any provision of this by-law or causes or permits a violation, shall be guilty of an offence and upon conviction thereof shall forfeit and pay a penalty not exceeding two thousand dollars (\$2000.00) (exclusive of, Costs) for each offence, and each day of the occurrence of the offence shall be deemed to be a separate occurrence, or to imprisonment for a term not more than (6) six months for each such offence, and every such penalty shall be recoverable under The Municipal Act, RSO 1990, and The Provincial Offences Act, RSO, 1990.

### **3.10 Complaints**

*The following process shall be used for the receipt of all complaints concerning alleged violations of this by-law. Violations relating to imminent public danger, or those requiring prompt action due to the short period of the violation occurring will not be governed by this clause.*

*3.10.1 Prior to the submission of a formal written complaint, complainants are requested to observe the Municipality of Kincardine Good Neighbour Policy, and shall attempt to remedy the situation in person with the alleged offender. Should this action not provide a reasonable and adequate remedy then the complainant is permitted to make a formal written complaint.*

*3.10.2 All complaints must be in writing, signed by the complainant and accompanied by a cheque for the amount of \$100.00. Such cheque is returnable if the complaint is deemed by the Agricultural Advisory Committee to have substance or merit. All complaints should be addressed to the municipal clerk who will contact the Agricultural Advisory Committee.*

### **3.11 Violations**

If any section, clause or provision of this by-law, including anything contained in the schedules attached hereto, is for any reason declared by a court of competent jurisdiction to be invalid, the same shall not affect the validity of the by-law as a whole or any part thereof other than the section, clause or provision so declared to be invalid and it is hereby declared to be the intention that all the remaining sections, clauses or provisions of this by-law shall remain in full force and effect until repealed, notwithstanding that one or more provisions thereof shall have been declared to be invalid.

### **3.12 Remedies**

In case any building or structure is to be erected, altered, reconstructed, extended or part thereof is to be used, or any lot is to be used, in contravention of any requirement of this by-law, such contravention may be restrained by action at the instance of any ratepayer or of the Corporation pursuant to the provisions of The Municipal Act, RSO 1990, as amended in that behalf.

### **3.13 Repeals**

From the coming into force of this by-law, any previous by-law(s) passed under Section 210, Par. 144 of The Municipal Act, RSO 1990, as amended, shall be deemed to be repealed.

## **SECTION 4.0 - INTERPRETATIONS:**

4.1 For the purposes, of this by-law, the definitions and interpretations given herein shall govern.

4.1.1. For the purposes of this by-law, words used in the present tense include the future; words in singular number include the plural and words in the plural include the singular number; the word 'shall' is mandatory; the word "used" shall include the words "intended to be used" and "designed to be used or occupied".

## **SECTION 5.0 - GENERAL PROVISIONS:**

### **5.1 Application of Other By-laws, Regulations, Legislation**

Nothing in this by-law shall operate to relieve any person from the obligation to comply with the requirements of the Ontario Building Code Act, RSO\* 1997, the Municipal Zoning by-laws or any other by-law of the municipality in force from time to time or the obligation to obtain any other licence, permit, authority or approval lawfully required by a governmental authority having jurisdiction to make such restrictions.

### **5.2 Non-complying livestock manure pits and/or livestock facilities of a type permitted by this by-law:**

Where a livestock facility and/or manure pit was lawfully established prior to the date of the passing of this by-law, *and is of-a type permitted, but does not meet the provisions prescribed by this by-law, the said facility may be reconstructed, expanded, repaired or renovated provided that:*

5.2.1 The reconstruction, expansion, repair or renovation of the facility is in compliance with the provisions of this by-law;

*5.2.2 The development, new construction or expansion of any earthen facility for use as a livestock manure pit is not permitted within the provisions of this by-law;*

5.2.3. All other applicable provisions of this by-law and the Municipality Zoning By-law are complied with.

### **5.3 Non-conforming Livestock Manure Pits and/or Livestock Facility of a type not permitted by this by-law:**

Where a liquid livestock manure pit was lawfully erected prior to the day of the passing of this By-law and is of a type **NOT** permitted by this By-law, the said facility may be reconstructed, repaired or renovated provided that:

5.3.1 The reconstruction, repair or renovation does not involve any alteration of use and the building or structure continues to be used for the same purpose;

*5.3.2 The development, new construction or expansion of any earthen facility for use as a liquid livestock manure pit is not permitted within the provisions of this by-law.*

5.3.3 All other applicable provisions of this by-law and the Zoning By-law are to be complied with.

5.3.4 The restoration of any building or structure which is damaged by fire or an act of nature, which does not conform with the provisions of this By-law, *is permitted provided that:*

- i. such restoration does not increase the height, size and/or volume or change the use of such building or structure; and
- ii. such restoration complies, as close as possible, with all applicable setbacks and yard provisions of the applicable zone without reducing the original height, size or volume.

*5.3.5 Where a livestock manure pit has been destroyed to the extent of more than 50 percent (50%) of its value as at the date of damage and which does not conform with the requirements of the by-law, it shall not be restored.*

### **5.4 Nutrient Management Plan:**

A Nutrient Management Plan shall be completed prior to the issuance of a building permit.

5.4.1 For a new liquid or dry manure system and/or livestock facility to serve an intensive livestock operation, or

5.4.2. For an expanded livestock liquid or dry manure system and/or housing capacity of a livestock facility for an intensive livestock operation. (This includes operations which are expanded to exceed 150 livestock units.)

5.4.3 Such nutrient management plan shall be prepared and submitted for peer review approval, consistent with the Terms of Reference attached as Appendix A.

5.4.4 An intensive livestock operation, for the purpose of this section is defined as exceeding 1.5 livestock units per acre and/or a 150 animal units.

5.4.5 All operations housing 50 or more animal units are required to follow the Nutrient Management Plan process and prepare the necessary Plan.

5.4.6 All operations housing 49 or less animal units are required to have an Environmental Farm Plan, by Dec 2001.

### **5.5 Separation Distances:**

Separation distances for the establishment of livestock buildings and liquid manure storage facilities shall be in accordance with the Provincial and Municipal Minimum Distance Separation II (MDS II) formula, *as determined by the greater of the proposed livestock units, or the maximum livestock capacity of the building or structure.*

#### **5.6 Maintenance:**

All components of a manure system shall be maintained to a safe standard including all fences. In addition, all abandoned manure tanks shall be drained of liquid and left in a condition where they will continue to stay drained *and not become a hazard to the public.*

*5.6.1 All intensive livestock operations under the provisions of this by-law are subject to a monitoring plan, as follows,*

*5.6.2 All wells, within 125 meters of the subject property on which the facility will be built and on any property on which the manure will be spread, will be collected and tested at the expense of the applicant, by a qualified third party, on a 3 year basis for ecoli, total coliform and nitrates. Specifically subject wells will be tested prior to operations commencing and on the third year anniversary, prior to the Nutrient Management Plan review. Data collected from this process will be provided to the Municipality of Kincardine, the Agricultural Advisory Committee and the well owners, and be used to support a Nutrient Management Plan review and update.*

*5.6.3 All perimeter monitoring tile drains will be subject to inspection by a third party at the expense of the applicant, and approved by the Municipality of Kincardine, twice per year, (usually spring and fall). This data will be compiled and used to support the Agricultural Advisory Committee's decision for NMP reviews.*

#### **5.7 Land Base:**

A tillable land base for spreading manure shall be maintained as determined by the Nutrient Management Plan, subject to the following:

*5.7.1 In no case will the livestock density exceed 1.5 livestock units/ tillable acre.*

*5.7.2 Twenty five percent (25%) of the property shall be owned with a minimum threshold of ninety-five acres for intensive farming. All owned and non-owned lands to be made available for the spreading of manure shall be declared in the Nutrient Management Plan, and identified by legal description.*

*5.7.3 All leases for land intended for the spreading of manure are to have a minimum term of three years. All leases for lands used for the spreading of manure are to be registered on the land title for the duration of the lease.*

*5.7.4 A proposed Nutrient Management Plan will use no more than 80% of the allocated land for manure application in any given year.*

*5.7.6 Manure may be sold or given away providing that an approved amendment to the Nutrient Management Plan, which includes the recipient property/ destination is completed. If the destination is processing for commercial sale, then a chain of custody must be provided to ensure that the manure arrives at its intended location.*

#### **5.8 Spreading and Disposal**

All lands to be used for spreading of manure are to *be within a ten km radius* of the site where the manure originated.

*5.8.1 All liquid manure applied within 125m of any built up area, or building used for a, residence, institution, commercial purposes, industrial purposes, recreational facility, must be incorporated within 24 hours.*

*5.8.2 Emergency exemptions for spreading are permitted by this By-Law under approval of the Agricultural Advisory Committee.*

#### **5.9 New Technology**

*The use of new technology is permitted when conclusive supporting scientific evidence can be provided and that the use of the new technology is approved by the Agricultural Advisory Committee. The use of new technology will be examined on a "case by case" basis and doesn't automatically negate other provisions of this by-law.*

### **SECTION 6.0 - PROVISIONS FOR NEW MANURE STORAGE STRUCTURES:**

No *livestock manure storage structure* shall hereafter be constructed or altered except in accordance with, the following provisions:

#### **6.1 Construction Standard:**

6.1.1 All liquid manure storage tanks shall be covered with an approved material and approved by the Chief Building Official.

*6.1.2 All intensive livestock housing structures and manure storage structures for liquid manure will have a perimeter foundation drain located, at the outside base of the foundation, with an adequate slope and appropriate monitoring well(s) as designed by the project engineer and approved by the 3<sup>rd</sup> party engineer.*

*If soil conditions are identified, as being inadequate to transfer potential leaks from beneath the structures to the perimeter drains, then an appropriate under floor drainage system connecting to the perimeter monitoring drainage system will be required. This system will be designed by an engineer licensed by the Province of Ontario and subject to 3<sup>rd</sup> party review.*

*6.1.3 Ensure that field drains within 15m (50ft) are effectively cut off and redirected away from structures. Older, abandoned tile drains may exist and must also be eliminated. On most farms, it will be necessary to trench around the entire building site to ensure that all drains have been discovered. Some drains are quite deep, so the perimeter trench should be at least 5ft. deep. A tile drainage machine can be used to locate existing drains.*

*6.1.4 All wells abandoned, ancient or exposed due to construction, within 100 meters of liquid livestock storage facility, or in fields used for spreading liquid manure, must be sealed through a process approved by an engineer licensed by the Province of Ontario.*

*6.1.5 All liquid manure storage structures shall be designed, by use of site location and/or berms etc. to safely capture all possible spilled liquid manure, in the event of a failure of the above ground portion of the structure.*

*6.1.6 All dry manure storage practices must meet or exceed the recommendations defined in the OMAFRA "Best Management Practices, Livestock and Poultry Waste Management" guidelines, unless otherwise approved by the Agricultural Advisory Committee.*

## **6.2 Minimum Separation Distances:**

All livestock facilities shall be located in accordance with the Provincial and Municipal Minimum Distance Separation II (MDS II) formula.

## **6.3 Prohibited Areas:**

All livestock facilities are prohibited in any flood plain.

## **6.4 Storage Capacity:**

Storage capacity (total combined in-barn and tank) shall *be for a minimum of 365 days and shall not exceed 1000 days.*

## **6.5 Storage Covers:**

*All liquid manure storage structures are required to have a cover. The proponent must identify the cover to be used and qualify its validity. The proposed cover must be approved by the Agricultural Advisory Committee.*

## **6.6 Fencing**

*6.6.1 All existing liquid manure storage structures must have approved fencing (as per the Municipality of Kincardine fencing regulations). Those structures with approved "hardened" covers, or walls higher than 1.5metres and not posing a safety hazard would be exempt from this requirement.*

*6.6.2 Approved fencing shall consist of a continuous woven wire fence topped with a single strand of barbed wire, with a self supporting gate, constructed of similar materials designed to prevent the access of people and animals. The fence shall be erected on top of the structure or grade and extend to a height of 1.5 metres.*

## **SECTION 7.0 - PROVISIONS FOR EARTHEN MANURE STORAGE:**

*Under the provision of this by-law, no earthen liquid livestock manure storage facility shall hereafter be constructed or enlarged. No existing earthen liquid livestock manure storage facility shall be altered except in accordance with the following provisions and an engineers report must be submitted before a permit for repair, remediation, or mitigation is issued. Earthen liquid livestock manure storage facilities found not to be compliant with this by-law, even after remediative measures have been performed, will be deemed a hazard to the environment and shut down. Costs incurred through professional engineering fees etc. shall be the responsibility of the operation owner.*

## **7.1 Soil And Water Table:**

*7.1.1 Earthen manure storage shall be constructed with a minimum of 10 metres of natural material, at a hydraulic conductivity no greater than  $1 \times 10^{-8}$  m/sec below the bottom of the storage and above the upper most identifiable groundwater source capable of transmitting contaminants beyond the farm boundary or equivalent competent material, or*

*7.1.2 Earthen manure storage shall be constructed with a clay liner 1.0 m at a hydraulic conductivity of  $1 \times 10^{-9}$  m/sec and 3 metres of natural material at a hydraulic conductivity no reater than  $1 \times 10^{-10}$  m/sec below the bottom of the storage and above the upper most identified ground water source capable to transmitting contaminants beyond the farm boundary, or a material that provides equivalent or greater protection than in 7.1.1, and is capable of withstanding the necessary stresses of handling, chemical action and physical loading.*

*7.1.3 The soils between storage bottom and bedrock or other aquifer shall include a minimum thickness of 3 metres of silt or fine sand OR 1 metre of clay;*

7.1.4 The normal water table shall be a minimum of 2 metres below storage bottom in sandy soils, 1 metre in silty soils and no restriction in clay.

## 7.2 Maximum Side Slopes Including Dike

7.2.1 Sandy loams 3:1

7.2.2 Stable clays, Clay loams & Silt loams 2:1

## 7.3 Minimum Dike Top Width

7.3.1 for stable soils - 5 m

7.3.2 for unstable soils - 10 m

## 7.4 Surface Water Diversion

7.4.1 To exclude surface water away from storage, diversion ditches and/or dikes will be required.

7.4.2 Earthen storage built to standard may be required to control surface water run-off.

## 7.5 Fencing

**7.5.1 All existing liquid manure storage structures must have approved fencing (as per the Municipality of Kincardine fencing regulations). Those structures with approved "hardened" covers, or walls higher than 1.5metres and not posing a safety hazard would be exempt from this requirement.**

**7.5.2 Approved fencing shall consist of a continuous woven wire fence topped with a single strand of barbed wire, with a self supporting gate, constructed of similar materials designed to prevent the access of people and animals. The fence shall be erected on top of the structure or grade and extend to a height of 1.5 metres.**

## SECTION 8.0 - BY-LAW REVIEW:

***This by-law will be reviewed every three years or sooner as required and prior to the Agricultural Advisory Committee changing more than 50% of its members.***

## SECTION 9.0

This By-law shall come into full force and effect on its final passing.

This By-law may be cited as the Nutrient Management, By-law".

**READ a FIRST and SECOND** time this ?? day of ??? 2000.

**READ a THIRD** time and **FINALLY PASSED** this ?? day of ??? 2000.

Mayor Clerk

## APPENDIX A

### Page 1 of 3

Forming part of By-Law 1999- covering Application, Administration, Enforcement and Frequency of Renewal.

Application

A Nutrient Management Plan shall be completed by any person applying for a Building Permit to Construct or Enlarge any livestock **structure or** manure storage facility.

2. To apply Dry/Liquid manure:

- a. Under 50 Animal Units, a Nutrient Management Plan is voluntary, (***an Environmental Farm Plan will become mandatory after Dec 2001***).
- b. 50 to 150 Animal Units a Self-Directed Nutrient Management Plan is recommended, (***this will become mandatory after Dec 2001***).
- c. 150 + Animal Units, a Third party Verified Nutrient Management Plan is required.
- d. Animal density of one and a half (1.5) or greater Animal Unit per Acre requires a Third Party Verified Nutrient Plan.

3. A Self-Directed Nutrient Management Plan shall include the following:



- i. Provide Tap Water Sample prior to construction
- ii. Identify previous years' Nutrients
- iii. Record of how and when applied
- iv. Identify Environmental risks, i.e., open creek/ditch; Municipal Drain/Drains
- v. Identify non-owned land available for spreading, if applicable
- vi. Calibrating nutrient application equipment.
- vii. Statement of Certification: I, certify that I have spread the forementioned Nutrients on the specified fields.

Signed

## EXAMPLE OF SELF-DIRECTED NUTRIENT MANAGEMENT PLAN

Diagram A - a drawing of your farm or area on which to apply nutrient and the crop to be grown.

40 Beef Feeders =70 Animal Units  
120 Sheep

15 ac mixed grain  
6T/ac  
Dry Manure

15 ac hay  
6T/ac  
Dry Manure

30 ac hay  
150 lb/ac 0-14-42

30 ac corn  
250 lb/ac 19-19-19  
100 lb/ac 46-0-0

House

Barn

## APPENDIX A (Continued)

Page 2 of 3

4. A Third party Verified Nutrient Management Plan shall ***include but not be limited to*** the following components ***as found in the Municipality of Kincardine Nutrient Management Kit:***

- i. Soil testing for available nutrients using provincially accredited laboratories
- ii. Manure testing for available nutrients, using provincially accredited laboratories
- iii. Identification of residual nitrogen sources, based on previous agronomic practices
- iv. Relation of added nutrients to soil, test results and nutrient requirements of crops being produced..
- v. Assessment of application methods and timing to optimally apply nutrients.
- vi. Calibrating manure and fertilizer spreaders to ensure application rate and placement is accurate.
- vii. Identification of environmental risks associated with managing agricultural nutrients.
- viii. Proper containment of agricultural nutrients while being stored.
- ix. Contingency plans for use in the event of an unintended spill.
- x. Manure spreading etiquette that will minimize complaints relating to nutrient management practices.
- xi. Hectares of arable land made available, by legal agreement, for manure disposal along with two copies of such agreement.
- xii. Provide water sample prior to construction and upon re-submission of Nutrient Management Plan.

xiii. *Certificate to Accompany Nutrient Management Plan*

*Certificate Prepared by a Third Party, Reviewer or Farmer.*

I, \_\_\_\_\_, hereby certify that based on relevant information provided in good faith and excluding unforeseen or uncontrollable circumstances, the recommendations contained in the attached report will, if implemented, result in acceptable management practices. Acceptable management practices refer to normal farming practices that do not contravene any applicable law.

5. Enforcement

5.1 Investigation of a person's Nutrient Management Plan shall occur when a written complaint, accompanied by a **\$100.00 cheque** (returned if the complaint has merit, cashed if the complaint is a nuisance variety) is presented to the Clerk's office. An initial **review** will be **conducted** by the **Agricultural Advisory Committee**. If no positive results occur, the matter would be referred to the By-Law Enforcement Officer, Municipal Council or the appropriate provincial ministry (MOEE/MNR).

5.2 Every person who violates the Nutrient Management Plan requirements as set out herein by not preparing, or not complying with a prepared Plan, and upon conviction thereof shall forfeit and pay a penalty not exceeding two thousand dollars (\$2,000.00) (exclusive of costs) for each offence, and each day of the occurrence of the offence shall be deemed to be a separate occurrence, or to imprisonment for a term not more than (6) six months for each offence, and every such penalty shall be recoverable under The Municipal Act, R.S.O. 1990, and The Provincial offences Act R.S.O. 1990.

APPENDIX A (Continued)

Page 3 of 3

Frequency

6.1 Nutrient Management Plans will be renewed every three years under normal, continuous management. If there is a change in management, the Nutrient Management Plan will need to be renewed within one year.

10.11.12.ii1.2.3.4.1.2.3.1.

**Section 3: Addressing Complaints: Developing a Response Process**

**1.0 Introduction**

The Terms of Reference approved by the Municipality of Kincardine included the following questions:

*"Should there be a process to handle complaints regarding agricultural operations?"*

*How should these complaints be handled?*

The Steering Committee recommended that there should be a process to address community concerns about potential and actual spills and poor farm practices in an efficient manner. The Steering Committee also provided the following guidelines which should be considered in the development of any complaint process:

- i. Manure or other agricultural spills are to be directly referred to the Ministry of Environment for investigation.
- ii. A "Good Neighbour Policy" should be established. Neighbours should first approach the potential violator about the complaint (i.e, neighbour is hauling too much manure to one field).
- iii. Should the "Good Neighbour Policy" approach not remedy the situation the complaint can then be referred to the Nutrient Management Plan Peer Review Committee.
- iv. The Committee reviews the complaint and the chairman assigns individuals from the Committee to investigate.
- v. Investigators report findings back to the Committee and the Committee deliberates on the choice of mitigative measures.

**2.0 Discussion - Agricultural Advisory Committee**

The study team therefore recommends the creation of a Municipality of Kincardine Agricultural Advisory Committee (AAC). The primary purpose/mandate of the Kincardine Agricultural Advisory Committee would be to:

- a. review and approve Nutrient Management Plans submitted as required by the Municipality of Kincardine Nutrient Management By-law # \_\_\_\_\_;
- b. respond to, investigate and report to Municipal Council on formal complaints filed in regards to a Nutrient Management Plan submitted as required by the Municipality of Kincardine Nutrient Management By-law # \_\_\_\_\_;
- c. providing the Council of the Municipality of Kincardine with advice regarding sound agricultural management practices as they relate to cash crop, livestock, poultry, horticultural, and other related operations throughout the Municipality when requested.

The Terms of Reference for this type of Committee would include:

- a Municipal By-law for the creation of the Agricultural Advisory Committee;
- the Purpose/Mandate of the Agricultural Advisory Committee;
- the Objectives of the Agricultural Advisory Committee;
- General Provisions for Agricultural Advisory Committee;
- guidelines on the Composition of Agricultural Advisory Committee;
- guidelines on the Selection of Agricultural Advisory Committee Members;
- Provision of a 'Secretary' for Agricultural Advisory Committee;
- Agricultural Advisory Committee Executive
- Agricultural Advisory Committee Operating Principle/Rules of Order
- guidelines for a Nutrient Management Plan Peer Review Sub-Committee
- Nutrient Management Plan Peer Review Sub-Committee Procedures
- guidelines for a Nutrient Management Plan Complaint Review Sub-Committee
- Nutrient Management Plan Complaint Review Sub-Committee Procedures
- Agricultural Advisory Committee Budget;
- Agricultural Advisory Committee Personal Liability;
- Agricultural Advisory Committee Conflict of Interest Guidelines.

For the benefit of Council we have included a full Terms of Reference for consideration.

**3.0 Recommendation**

**THAT** the Municipality of Kincardine authorize the creation of a Agricultural Advisory Committee (AAC) as per the DRAFT Terms of Reference submitted.

**THE CORPORATION OF THE MUNICIPALITY OF KINCARDINE**

**BY-LAW NO.**

**A BY-LAW TO APPOINT MEMBERS TO THE  
KINCARDINE AGRICULTURAL ADVISORY COMMITTEE**

**WHEREAS** it is expedient by the Council of the Corporation of the Municipality of Kincardine to establish a Kincardine Agriculture Advisory Committee and appoint members to same;

**THEREFORE**, the Corporation of the Municipality of Kincardine enacts as follows:

1. That a Kincardine Agricultural Advisory Committee be established which Committee shall operate in accordance with the Terms of Reference as set out in the Attached Schedule 'A'.
2. That the following representatives shall be appointed to the Kincardine Agricultural Advisory Committee for a period as indicated from the date of adoption of this By-law. **No committee member may serve more than 3 consecutive terms.**
  1. Name - 2 year
  2. Name - 2 year
  3. Name - 2 year
  4. Name - 2 year
  5. Name - 3 years
  6. Name - 3 years
  7. Name - 3 years
  8. Name - 3 years
3. Schedule 'A' attached hereto shall form part of this By-law.
4. This By-law shall be in force upon final reading thereof until such time as it is repealed.

READ A FIRST AND SECOND TIME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2000.

\_\_\_\_\_  
MAYOR CLERK

READ A THIRD TIME AND FINALLY PASSED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 2000.

\_\_\_\_\_  
MAYOR CLERK

SEAL

## Schedule 'A'

### Terms of Reference for the Municipality of Kincardine Agricultural Advisory Committee (AAC)

#### Preamble

Municipal Council accepted the establishment of a Nutrient Management Plan Peer Review Committee in terms of reviewing nutrient management plans on ....

A "Nutrient Management Planning Study" was subsequently undertaken as a requirement of Interim Control By-law #1999-102. The study indicated the need for a complaint review system or process through which the public could address issues of non-compliance with Nutrient Management Plans submitted as part of the Building Permit process.

Comments from a Steering Committee established as part of the Study and from the local community indicated that a complaint review committee/process needed to be established at the local level to deal with complaints and inquiries related to the Nutrient Management By-law.

It was subsequently recognized that the Nutrient Management Plan Peer Review Committee and a Complaint Review Committee could be established under a unified Terms of Reference and jointly referred to as the 'Kincardine Agricultural Advisory Committee'.

#### Purpose/Mandate

The Kincardine Agricultural Advisory Committee will operate as a group of peers from the farm community and from the community-at-large. The primary purpose/mandate of the Kincardine Agricultural Advisory Committee (AAC) is to:

- a. review and approve Nutrient Management Plans submitted as required by the Municipality of Kincardine Nutrient Management By-law # \_\_\_\_\_;
- b. respond to, investigate and report to Municipal Council on formal complaints filed in regards to a Nutrient Management Plan submitted as required by the Municipality of Kincardine Nutrient Management By-law # \_\_\_\_\_;
- c. providing the Council of the Municipality of Kincardine with advice regarding sound agricultural management practices as they relate to cash crop, livestock, poultry, horticultural, and other related operations throughout the Municipality when requested.

AAC and/or a sub-committee may provide an alternative dispute resolution service and has the potential to resolve many agricultural issues locally without provincial involvement.

The Municipality/Committee acknowledges and understands that some complaints, clearly fall within the mandate of the Ministry of Environment or the Farm Practices Review Board and therefore the Municipality/Committee should not become involved with these complaints.

#### 1.0 Mission Statement

##### Goal

To provide a balanced, inclusion discussion and advisory forum for citizens and stakeholders to proactively collaborate with and provide advice and recommendations to Municipal Council

#### 2.0 Objectives

To fulfil the mission statement indicated, the AAC will undertake some or all of the following objectives:

- 2.1 Educate itself and others in an effort to better understand the Nutrient Management Planning process;
- 2.2 Ensure that responses to public complaints are provided in a timely fashion;
- 2.3 Ensure that responses to Nutrient Management Plans submitted as per the authorizing by-law are provided in a timely fashion;
- 2.4 Verify, critique and provide recommendations to Municipal Council and municipal staff on reports, documents and complaints submitted for review;
- 2.5 Attempt to resolve complaints and other issues in an inclusive manner;
- 2.6 Maintain active, open, two-way communication with Municipal Council and the general public regarding Nutrient Management issues;
- 2.7 Establish a network with other Agricultural Advisory Committees, community groups, organizations, agencies and the broader agricultural community; and
- 2.8 Research and promote where applicable innovative technologies and/or programs for addressing nutrient management issues.

#### 3.0 General Provisions

3.1 At the request of any AAC member, these Terms of Reference may be considered for amendment and that any amendment consented to by AAC members shall be forwarded to Council for review and approval.

3.2 Municipal Council may refer specific agenda items to AAC for its review and discussion.

3.3 Municipal Council shall not have any involvement in the day to day operations of any committee established under this By-law.

3.4 All meetings will be held without prejudice to the right of any committee member to appear in support or opposition to a proposal. Further, any views or opinions expressed or not expressed by committee members will not and cannot be used against the member at public meetings and hearings.

#### **4.0 Composition of Agricultural Advisory Committee (AAC)**

For the AAC to achieve its goal and purpose, membership in the AAC should not only reflect the land based activities within the Municipality, but also the community-at-large, reflected by members of the general public.

It is intended that the entire Committee meet as necessary to discuss central issues, deal with general information/education matters, and review the types of complaints/inquiries the Committee is fielding. For this purpose, the entire Committee should meet at least once a year.

4.1 When possible representation on the Committee should be from a geographic cross-section of public-interests from within the Municipality.

4.2 The Committee shall be limited to a maximum of eight (8) members. Quorum for the purposes of decision making shall be five (5) members.

4.3 Six (6) members of the Committee shall be bona fide farmers representing the agricultural sector. In addition 50% of the Committee must be bona fide full time operating farmers, 25% can be members from agricultural related business and 25% can be from other businesses.

#### **5.0 Selection of AAC Members**

Committee members are appointed based on their technical expertise, experience or involvement in the community. They are considered to be leaders within the agricultural community. As well, committee members are to be selected to ensure representation from across the Municipality, from various agricultural associations and various commodity groups.

5.1 The Municipality shall advertise in a local paper for prospective members of the Committee.

5.2 The Clerk of the Municipality of Kincardine in association with the Secretary (see Section 6.0) shall recommend the members of AAC.

5.3 Municipal Council shall ratify the members.

5.4 Initial appointments shall be divided into two groups: one group of four individuals appointed for two (2) years and a second group of four to be appointed for three (3) years and thereafter, all terms will be two years long. Appointments are to be determined by random draw.

5.5 Members are eligible for re-appointment at the end of their respective terms. ***Again, no committee member may serve more than 3 consecutive terms.***

5.6 The Municipality shall replace any member who resigns at the earliest possible opportunity.

5.7 Replacement members shall be for the duration of the term remaining on the resigning member.

5.8 At the discretion of the Municipal Clerk and/or Secretary, replacement members may be appointed with Councils approval from a pool of eligible candidates established through the a previous 'Public Notice' process or from a formal request for Members in a local paper.

#### **6.0 Secretary**

A Secretary shall be provided by the Municipality in order to provide overall co-ordination, advice and support to the AAC.

6.1 The Municipality of Kincardine shall provide a 'Secretary' to support the functioning of the AAC and Complaint Review Committees.

6.2 The duties of the Secretary shall include but not be limited to: co-ordination of meetings and site visits, preparation of minutes and agendas. Secretarial services will be provided by the Secretary or their designate.

6.3 The Secretary shall not be a voting member of AAC or a Complaint Review Committee.

#### **7.0 AAC Executive**

In order to facilitate the workings of the Kincardine Agricultural Advisory Committee, an Executive Committee may be struck.

7.1 The AAC will elect a Chair and Vice Chair from its membership.

7.2 The election of Chair and Vice Chair may be by secret ballot if requested.

7.3 If a vacancy of the Chair or Vice Chair occurs, an election will be held.

7.4 The term of the Chair and Vice Chair shall be set at one (1) year.

7.5 At the end of the term the Chair and Vice Chair may elect to stand for office for a second year only.

7.6 The powers of the Executive shall be limited to chairing meetings, setting meeting dates and appointing members to select committees.

7.7 The Chair, Vice Chair or their designate may represent AAC at Council meetings, media briefings and other events where AAC recommendations and advice is needed.

## **8.0 Committee Operating Principles/Rules of Order**

8.1 Consensus shall be the operating principle of AAC and any sub-committee. When consensus building techniques are not facilitating the progress of a meeting or review, the committee may determine that voting procedures are desirable.

8.2 Where voting is utilized, Roberts Rules of Order will be followed, and minority opinions will be documented.

8.3 Additional rules of procedure may be established by the AAC.

8.4 AAC shall support the establishment of a "Good Neighbour Policy" to deal with complaints of an agricultural nature and the construction/expansion of intensive livestock operations.

8.5 AAC members may propose agenda items for review and discussion at each regular meeting.

8.6 Previous meeting minutes/records and agendas shall be available within 4 days of an AAC meeting.

8.7 Municipal Council and staff may attend AAC meetings

8.8 In order to facilitate the workings of AAC, sub-committees may be formed to consider specific matters as requested by AAC. Sub-committee representatives may be requested to report to Council recommendations relative to their sub-committee.

## **9.0 Nutrient Management Plan Peer Review Sub-Committee (NMP-PRC)**

The AAC Nutrient Management Plan Peer Review Sub-Committee will be tasked with the review of the adequacy of Nutrient Management Plans and providing recommendations to Council/CBO in respect to same.

When dealing with a specific application regarding a Nutrient Management Plan filed with the Municipality of Kincardine as per the requirements of By-law No. \_\_\_\_\_, a smaller group of the Agricultural Advisory Committee will be established for the purpose of conducting a review of the Plan and to formulate recommendations.

9.0.1 A Peer Review Sub-Committee shall consist of no less than three (3) members.

9.0.2 The Chair or Vice Chair shall be a member of all Peer Review Committees.

9.0.3 The Chair shall assign members to the Peer Review Committee.

## **9.1 Peer Review Committee Procedures**

The following terminology is adopted: Applicant = complaint, Agricultural Operator = respondent

9.1.1 When a complete application is received by the local Chief Building Official, Clerk or designate, the review process begins.

9.1.2 The Municipality shall determine if the application is complete.

9.1.3 If deemed to be covered under the Nutrient Management By-law the CBO/Clerk shall forward a copy of the application and associated documentation to the Secretary.

9.1.4 The Secretary shall contact the AAC Chair or Vice Chair as appropriate.

9.1.5 The AAC Chair or Vice Chair shall appoint members to a Peer Review Committee within 2 working days of being contacted. The Secretary will distribute information to appointed members as required.

9.1.6 Notice of a review by the PRC shall be given to the applicant.

9.1.7 The applicant shall be given the opportunity to present to the Peer Review Committee.

9.1.8 The Peer Review Committee shall perform a site visit with the applicant.

9.1.9 The Peer Review Committee shall hold at least one meeting, open to the public, during which review findings are presented and written recommendations, with reasons, prepared for submission to Municipal Council and to the parties involved.

9.1.10 Recommendations are to be submitted to Municipal Council and to the parties involved no later than 15 working days after the application is received by PRC members from the Secretary unless an extension is mutually agreed to by the applicant and Committee.

## **9.2 Peer Review Committee Reporting Procedures**

9.2.1 AAC sub-committee representative and/or the Secretary will report its discussions and recommendations to Council and CBO in the form of a written report

9.2.2 In the event of a dispute relating to Council and/or CBO's acceptance of an AAC recommendation, the AAC may make public its recommendations at the expense of the Municipality.

## **10.0 Complaint Review Sub-Committee (NMP-CRC)**

The AAC Nutrient Management Plan Complaint Review Sub-Committee will be tasked with reviewing written complaints and inquiries concerning nutrient management plans and providing recommendations in respect to same.

When dealing with a specific complaint regarding a Nutrient Management Plan filed with the Municipality of Kincardine as per the requirements of By-law No. \_\_\_\_\_, a smaller group of the Agricultural Advisory Committee may be established for the purpose of conducting an investigation of the complaint and to formulate recommendations.

The following terminology is adopted: Applicant = complaint, Agricultural Operator = respondent.

10.0.1 A Complaint Review Sub-Committee shall consist of no less than three (3) members.

10.0.2 The Chair or Vice Chair shall be a member of all Complaint Review Committees.

10.0.3 The Chair shall assign members to the Complaint Review Committee.

## **10.1 Complaint Review Committee Procedures**

10.1.1 When a formal written complaint is received by the local Chief Building Official, Clerk or designate, the complaint review process begins.

10.1.2 The Municipality shall determine if the complaint is subject to other legislation.

10.1.3 If deemed to be covered under the Nutrient Management By-law the CBO/Clerk shall forward a copy of the complaint to the Secretary along with the appropriate documentation on the Nutrient Management Plan.

10.1.4 The Secretary shall contact the AAC Chair or Vice Chair as appropriate.

10.1.5 The AAC Chair or Vice Chair shall appoint members to a Complaint Review Committee within 2 days of being contacted. Secretary will distribute information to appointed members as required.

10.1.6 The CRC shall meet formally at least once and no later than 3 days after being appointed by Chair or Vice Chair.

10.1.7 The CRC shall determine if the complaint is trivial, frivolous, vexatious, or not made in good faith. If such a determination is made, the complaint shall be dismissed and the submitted fee cashed by the Municipality.

10.1.8 If during its review, the CRC determines that the subject matter should be dealt with by the MOE or another government agency, the Committee will notify the Secretary immediately.

10.1.9 Notice of a review by the CRC shall be given to the applicant and respondent.

10.1.10 The applicant and respondent shall be given the opportunity to present 'evidence' to the Complaint Review Committee.

10.1.11 The Complaint Review Committee shall perform a site visit with or without the permission of the respondent.

10.1.12 The Complaint Review Committee shall hold at least one meeting, open to the public, during which review findings are presented and written recommendations, with reasons, prepared for submission to Municipal Council and to the parties involved.

10.1.13 Recommendations are to be submitted to Municipal Council and to the parties involved no later than 10 days after the complaint and documentation is received by CRC members from the Secretary unless an extension is mutually agreed to by the applicant and respondent.

## **10.2 Complaint Review Committee Reporting Procedures**

10.2.1 AAC sub-committee representative and/or the Secretary will report its discussions and recommendations to Council in the form of a written report

10.2.2 In the event of a dispute relating to Council's acceptance of a AAC recommendation, AAC may make public its recommendations at the expense of the municipality.

## **11.0 Budgetary Considerations**

Given that the adherence to good farm management practices and the resolution of disputes at the local level are of benefit to all ratepayers in a given area, the cost of operations for the Committee when dealing with a complaint should be borne at the local level. Accordingly the cost of responding to a complaint will be charged back to the operator in violation on a cost recovery basis.

Where the entire Committee is meeting to discuss central issues, deal with general information and education matters, the costs associated with such meeting shall be borne by the Municipality.

11.1 AAC members will be compensated as per the municipality working committees policy

11.2 AAC members costs for mileage, phone calls, faxes, etc. related to Committee business will be reimbursed at Municipal rates upon submission of a Expense Claim Report.

11.3 AAC member training costs are to be borne by the Municipality.

11.4 Cost of services provided by the Secretary are to be borne by the Municipality.

11.5 Costs of mailing, photocopying and related items are to be borne by the Municipality.

## 12.0 Personal Liability

12.1 Committee members are covered by the Municipality of Kincardine Municipal Liability Policy and the Errors and Omissions Policy (or whatever the title is).

## 13.0 Conflict of Interest Guidelines

To be taken from Kincardine.

# Section 4: Evaluative Models: Planning for Agriculture and the Environment

## 1.0 Introduction

The Terms of Reference approved by the Municipality of Kincardine included the following research question:

*What evaluative 'models' are available to assist in planning for agriculture and the environment?*

This question was not brought forward to the Steering Committee nor to the general public for comment or discussion. It was recommended that research by the consultants be conducted into the issue due to the technical nature of the question.

This chapter reviews the following concepts/models and tools:

- Concept of 'Carrying Capacity' including
- Land Assimilative Capacity Modeling
- Land Evaluation Models/Tools including
- Minimum Distance Separation Formulae
- NMan99/2000
- Township Comprehensive Zoning By-law
- MCLONE4
- Livestock PROduction Decision Support System (LPRODSS)
- Model limitations
- Recommendations to Municipal Council

## 2.0 Carrying Capacity

Carrying Capacity is a term that serves a useful purpose in defining the maximum density of organisms that a particular environment can sustain in perpetuity. It therefore describes the equilibrium population density as determined by the resources available in the region bounding the population in question. This is a "broad based" planning model proposed to be applied at a regional or county level.

Many residents in Bruce County and the Municipality of Kincardine have questioned whether or not the 'carrying capacity' of the County and/or the Municipality is being exceeded in terms of manure production and the capacity of the land/crops to assimilate the material. In general, this can be summarized to read as:

*"How many animals can we have in the Municipality of Kincardine before the environment begins to be affected by their manure?"*

It has been suggested that a "Land Assimilative Capacity" study could be undertaken in order to answer this question. In essence this proposal would be applying the "broad based" regional model at the local or municipal level.

## 2.1 Land Assimilative Capacity Modeling

A Land Assimilative Capacity Model would attempt to provide some measure of the availability and assimilative capacity of lands in the Municipality which are suitable for manure application.

As far as the County of Bruce Planning and Economic Development Department can ascertain, this type of study has not been conducted in Ontario. The following model was developed for Saline County, Missouri by Lory and Barnett (1998).

The model for Saline County was developed by the University of Missouri-Columbia and is composed of three relatively simple components:

### a) Developing an Animal Feeding Operation data file:

- locating and classifying all livestock operations in the Municipality by animal type, animal numbers, manure storage system, and manure application system;
- providing a historical look at the data in order to adequately review fluctuations in the number of animals.



## b) Estimating the Nutrient Production of the Animal Feeding Operations:

- the plant available nutrient amounts are calculated based on the data collected regarding the Animal Feeding Operation

Example:

Plant available nutrients (lbs.) = A x B x C x D

where A = animal numbers

B = annual nutrient production

C = nutrient retention in storage and handling

D = nutrient retention during land application

## c) Calculating the Crop Nutrient Assimilation Capacity:

- cropland assimilative capacity is based on the estimated nutrient removal or fertilizer need for all row crop acres suitable for manure application based on current OMAFRA recommendations.

In summary, the assimilative capacity of the land would represent the difference between the amount of nutrients produced and the ability of the crops to uptake the applied manure.

## **2.2 Results of the Saline County Modeling Exercise**

Saline County has an estimated 291,600 acres in cropland of which 77% was suitable for land application of manure based on State of Missouri rules. Primary crops grown on acreage were soybean (47%), corn (40%) and wheat (13%).

The land deemed suitable for manure application was estimated to have an assimilative capacity of 33,170,000 pounds of nitrogen and 10,250,000 pounds phosphate. These estimates were based on the nutrient removal capability of row crops in the County.

The researchers noted that the quantity of nutrients generated by animal feeding operations is dependent on the type of manure storage system and land application system.

Calculations based on the algorithms developed by the study team indicated that the production of nutrients by animal feeding operations represented a small portion of the crop assimilation capacity of the County based on their current cropping systems and State regulations.

In the worst case scenario calculated by the study team, only 9.4% of the total land assimilative capacity for phosphorus was used. In the worst case scenario for nitrogen, the study team calculated that only 2.3% of the total land assimilative capacity was used.

## **3.0 Land Evaluation Models**

There is a need for tools to guide decision-makers in choosing management practices that are economically and environmentally sound, and socially acceptable. Land evaluation may be defined as:

*"the process of assessment of land performance when the [land is] used for specified purposes"*

(Food and Agriculture Organization of the United Nations, 1985)

or as

*"all methods to explain or predict the use potential of land"*

(van Diepen et. Al., 1991)

### **3.1 What is a Land Based Evaluation Model/Tool**

A land based model attempts to replicate natural processes such as soil erosion, water runoff from fields, rainfall patterns etc. through the use of mathematical calculations. The model/tool assists in decision making by replicating real world processes in order to understand possible implications. This in essence is an individual farm Nutrient Management Planning model at the individual level.

For example a basic soil erosion model, the Universal Soil Loss Equation (USLE) combines mathematical expressions of rainfall intensity, type of soil, slope and length of a field, the type of crop on a field and management measures such as type of tillage, to produce an approximation of how much soil would be lost under this unique set of circumstances. The number produced can then be used to aid farm operators in their management decisions.

### **3.2 What land based evaluative models can be used to evaluate an application?**

The Municipality of Kincardine currently uses three evaluative models when reviewing an application for an intensive livestock operation in addition to regulatory control over the siting of building.

These tools combined can be viewed as a mini "environmental assessment" of a proposed intensive livestock facility.

#### **3.2.1 Minimum Distance Separation Formulae**

The Ontario Ministry of Agriculture, Food and Rural Affairs has published a guideline for recommended separation distances between a new livestock facility and non-compatible land uses. The calculation of the MDS involves the use of four factors which are determined by using tables in the publication.

The first factor "A" represents the barn odour potential. For swine operations, "A" is 1.0 and for a free stall dairy facility "A" is 0.7. The second factor,

"B", takes adjustments for the number of livestock units on the farm site. The third factor "C" is based on the percentage increase of livestock units on the farm (assumes expansion of an existing livestock operation). For an expansion of 50% or less (based on animal units), "C" is 0.7 and gradually increases up to 1.14 for either a 700% increase or a new operation. The final input factor, "D" is determined by the fundamental type of manure handling system used. Factor "D" is either 0.8 for a liquid system or 0.7 for a solid manure system.

The numerical values of the four input factors are simply multiplied together to generate a building base distance, "F". The values for "F" can then be used to determine the separation distances, "S", for both the buildings and the manure storage units by using a different table in the publications.

### 3.2.2 NMan99/2000

The second evaluative tool is the NMan99 - Nutrient Management Program also developed by the Ontario Ministry of Agriculture, Food and Rural Affairs. The program is used by farm operators to optimize the management of livestock manure in an economically and environmentally acceptable manner.

Nman99 helps complete nutrient management plans and can be used to optimize the usage of manure nutrients. The program helps to optimize the use of commercial fertilizer and reduce the over application of manure. The program can be used to ensure that a farm has enough land to spread manure in an environmentally acceptable manner.

### 3.2.3 Township Comprehensive Zoning By-law

The Zoning By-laws for the former Townships of Kincardine and Bruce have established setbacks for all buildings from watercourses and property lines which dictate where a building may be built. The Zoning By-laws also regulate construction in environmentally sensitive areas.

In order to reduce the potential for conflict between agricultural operations and sensitive land uses in the future, additional policies restricting the creation of all new non-farm lots/severances could be pursued.

In addition, up to date Environmental Protection mapping of the sensitive areas in the Municipality is essential if long-term protection of these resources is desired.

At the present time, we do not recommend the placing of new or existing intensive agricultural operations in a new zone category.

## 4.0 What other models/tools are available?

Most of the land based evaluation models/tools have tended to concentrated on the issue of soil erosion and nutrient runoff/leaching. There are however a number of new initiatives which are being developed to address the issue of manure and land application in particular.

### 4.1 MCLONE4 (Manure, Cost, Labour, Odours, Nutrients, Environment)

MCLONE4 is a decision support (DSS) computer program for the management of livestock manure. The name MCLONE is derived from the word Manure and five criteria the program uses to evaluate and rate a planned or operating manure handling system: Cost, Labour, Odours, Nutrients, and Environment.

A first version of MCLONE4 became available in April 1999. It was developed with financial support of Ontario Pork, the Canadian Farm Business Management Council, the Enhanced Partnership of the University of Guelph and the Ontario Ministry of Agriculture, Food, and Rural Affairs, and the cooperation of participating dairy and swine producers.

MCLONE is a Windows platform computer program for dairy and swine manure system design and manure management. It is oriented to optimum usage of N and P nutrients. The user could change the relative weighting given to the five evaluation criteria when comparing different systems. Major improvements included an ability to use detailed inputs of feed to estimate N and P outputs from pigs, and a P index to determine the impact of farming practices, soil type and crop, on losses of P to streams. A new project was established, in May 1998, to enhance MCLONE by adding improved environmental and economic evaluation capabilities. The development of MCLONE4 had the following objectives:

- to improve the economic decision support of existing software (MCLONE3) to deal with a broader range of manure handling equipment and types;
- to improve the environmental decision support of MCLONE3 to deal with potential pollution and odour risks from livestock housing and manure usage; and
- to produce a new computer program to handle a wide range of options for livestock management and manure types.

The project to develop MCLONE4 has had the following results:

- a computer based decision support program (MCLONE4) that incorporates the latest information on livestock manure production and nutrient losses;
- the program estimates the cost of manure handling equipment and the benefit of plant-usable manure nutrients; and
- the program estimates the risk of environmental damage due to odours, nutrient losses, losses of phosphorus to water courses and bacterial transport to groundwater.

The developers of this DSS continue to upgrade the various components and are currently working to improve the integration of NMan99 into the current structure. The County of Bruce Planning and Economic Development office will continue to follow the progress of the changes and to evaluate its potential use by municipalities in the County.

### 4.2 Livestock PROduction Decision Support System (LPRODSS)

The Livestock PROduciton Decision Support System (LPRODSS) is a Decision Support System (DSS) in development by University of Missouri and

Iowa State University. The DSS may be used to: (1) select optimal sites for locating livestock production enterprises at various spatial scales; (2) determine socially acceptable and environmentally sound land areas for animal manure application; and (3) evaluate the economic and environmental implications of livestock production practices, including alternative land management strategies.

This model/DSS is still in the development/pilot test stage.

## 5.0 Decision making with Models - Limitations and Opportunities

The results produced by a model or Decision Support System are a reflection of the quality of the data available and of the quality of the internal workings of the model. Simply put, some models do a better job at mimicking real life than others. Therefore a model must be fully tested and its results compared against real world data before it is put into operation otherwise, poor decisions will be made. Some of the limitations and opportunities associated with models include:

- garbage in = garbage out: the results of a modeling exercise are only as good as the data that is available;
- there is a lack of input data/background information in order to run the models;
- there are financial costs associated with data collection;
- the model process itself (i.e. calculations and assumption) does not mimic natural process accurately leading to inaccuracies;
- there is a lack of expertise at the local and county level to implement and run various models;
- scale issues (at what level should a model be used);
- time issues: the development and use of a model or DSS takes time that is not always available;
- results from a modeling exercise are often subject to intense scrutiny and controversy from those supporting the findings and those questioning the findings;
- the model used in Missouri is relatively simplistic requiring no large computer programs
- good data/models can improve decision making;
- the data collection exercise alone can provide the Municipality with a more comprehensive picture of local agriculture.

## 6.0 Recommendations

**THAT** further review of a 'Land Assimilative Capacity' study should be pursued. It should be recognized that the results of such a study, and the costs associated, not be prove to be overly beneficial to the decision-making process.

**THAT** the Nutrient Management Plan Agricultural Advisory Committee should be trained, and refreshed as required, on the most recent nutrient management programs from the Province.

**THAT** the Municipality of Kincardine and the Nutrient Management Plan Agricultural Advisory Committee pursue the Ontario Ministry of Agriculture, Food and Rural Affairs to finish integration and testing of the MCLONE4, or a similar program, as soon as possible.

## 7.0 References

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OMAFRA and MOE. 1995. Minimum Distance Separation (MDS II). Ontario Ministry of Agriculture, Food and Rural Affairs and Ontario Ministry of Environment. Guelph, Ontario.

Stonehouse, D.P., M.J. Goss and J.R. Ogilvie. 1998. "A Decision Support System for Manure Systems - Alternatives on Dairy and Swine Farms." In Animal Production Systems and the Environment: An International Conference on Odor, Water Quality, Nutrient Management and Socioeconomic Issues. Iowa State University, Ames Iowa.

U. Sunday Tim, T. Prato, and C. Fulcher. 1998. "Integrated Spatially Explicit Decision Support System for Livestock Production Planning and Environmental Protection." In Animal Production Systems and the Environment: An International Conference on Odor, Water Quality, Nutrient Management and Socioeconomic Issues. Iowa State University, Ames Iowa.

## Section 5: Alternative Technology: Improving Agricultural Waste Management

### 1.0 Introduction

The Terms of Reference for the Study identified 'alternative technologies which could address odour problems and/or manure volumes' as an issue to be explored.

In order to more fully explore the intent of this issue, the Project Team expanded upon the concept and presented the Steering Committee and the general public with two separate but inter-connected issues/questions to be answered:

*Should the use of alternative technologies either presently available or under development that address problems such as odour and/or manure volumes be encouraged?*

*Should the use of those technologies be encouraged for all farming operations? Why?*

The recommendations from the Steering Committee and a further review of 'alternative technologies' is summarized in the following sections:

Section 2.0 - Steering Committee Recommendations regarding guidelines for the approval of 'alternative technologies' submitted under a Nutrient Management Plan;

Section 3.0 - Emerging environmental technologies and the agricultural industry

Section 4.0 -Minimum Distance Separation Formulae

Section 5.0 - Guidelines for the Review of Alternative Technology Applications

Section 6.0 - Summary

Section 7.0 - Recommendations

## **2.0 Steering Committee Review**

The Steering Committee agreed that alternative appropriate technologies have the potential to reduce the environmental impact of an operation and/or improve the economic competitiveness of an operation. The challenge is to make allowances in the approval process to actually encourage the use of alternative technologies. The regulatory process must allow for the consideration of alternative technology. To this end the Steering Committee recommended that:

*"the Nutrient Management Plan Peer Review Committee come up with a set of policies that encourages and allows for the testing of alternative ideas. Once in place, a alternative concept or technology would be referred to the Peer Review Committee for a Alternative Technology Application. Technology would be approved for testing through independent 3<sup>rd</sup> party review. Council could pass an exemption to the Nutrient Management Plan by law if needed as separate clause in by law... or apply for a research permit..."*

The Steering Committee also recommended that policy guidelines be developed as a means for reviewing any Application for Alternative Technology including:

- That the Nutrient Management Plan Peer Review Committee should review any application for a Application for Alternative Technology;
- That the technology/barn would not be exempt from the MDSII requirements;
- That a contingency plan addressing the unique aspects of the alternative technology must be established and implemented;
- That a bond or other financial security would be required from the proponent;
- That the bond or financial security would be drawn upon at the discretion of the municipality only for mitigative purposes should their be irreversible problems with the "alternative technology project";
- That the bond would be calculated based on an estimate for the contingency strategy to be implemented;
- That an evaluation/review period to assess the performance of the alternative technology would be established on a case by case basis;
- That the Nutrient Management Plan Peer Review Committee would have the latitude to call in a pertinent subject matter expert when required to assist in an evaluation; and
- That the costs related to an evaluation shall be borne by the proponent.

The Steering Committee did not recommend that alternative technologies be a required part of a nutrient management plan but rather the approval process for nutrient management plans provide an opportunity for their incorporation.

## **3.0 Environmental Technologies and the Agricultural Industry**

The interest in environmental technologies to address odours and manure nutrient surpluses from agricultural operations has grown over the past few years. Despite this growing interest the range of proven technologies or options open to farmers appears to remain quite limited.

Reviews of technology completed over the past three years indicates that there is no lack of ideas/concepts including some that have been subject to laboratory testing. However, field and farm scale testing is still in its infancy such that scientific evaluations and recommendations are not readily available.

Technologies applicable to the livestock industry generally address one or more of:

- manure odour reduction;
- manure volume reduction; or
- manure nutrient concentration reduction.

This section provides a review of two reports: i) A report from the Canadian Environmental Technology Advancement Corporation (CETAC) on "Environmental Technologies for the Hog Industry"; and ii) A report from the Federation des producteurs de porcs du Quebec on the "Evaluation of Liquid Hog Manure Management and Treatment Technologies" both completed in Canada, that have investigated environmental technologies designed to address the above.

### **3.1 "An Inventory of Environmental Technologies for the Hog Industry"**

In early 1999 Agriculture and Agri-Food Canada (AAFC) awarded a contract to CETAC-WEST (Canadian Environmental Technology Advancement Corporation - West) to develop an inventory of technologies for hog manure management. The Final Report entitled "Inventory of Environmental Technologies for the Hog Industry" was published in March 1999 (Appendix ??).

The purpose of the inventory was to identify technologies or products that can address environmental issues associated with manure management including feed modifications, manure storage, and manure processing such as composting. All technologies from those in the conceptual stage to those available commercially were included in the inventory.

Unfortunately the CETAC-WEST report provides only an inventory and does not evaluate the technology itself. The report notes that demonstration and evaluation of technologies is critical to the long-term acceptance of any new management and treatment technologies by the hog industry.

### **3.2 Federation des producteurs de porcs du Quebec**

In 1997 the 'Technological Transfer Working Group' as part of the Agro-Environmental Plan for the Hog Industry in Quebec produced a report titled "Evaluation of Liquid Hog Manure Management and Treatment Technologies" (Appendix ???).

Although it predates the CETAC-WEST inventory, the study actually evaluated 32 technologies according to predetermined data based on about 40 environmental, technical, agricultural, economic and social criteria. These technologies were designed to address either manure odour reduction, manure nutrient content reduction or manure volume reduction.

The report divided the results of the evaluation into two areas: 'Treatment systems chosen for their short-term potential' which included nine (9) systems and 'Treatment systems for medium or long-term consideration' which included four (4) systems. A treatment is a technology that alters the chemical and/or physical characteristics of liquid manure by various simple or complex procedures.

The authors of the report however offer the following caution to producers and others interested in the adoption of alternative technologies:

*"No process has reached the marketing stage. However, a number of processes offer a short-term development potential... Other processes still in the early stages of development also show a certain potential. However, these technologies will require medium to long-term development prior to marketing... Currently the processes capable of providing complete treatment are mostly at the laboratory testing or farm implementation stage. Major investments are required to permit the emergence of appropriate and effective systems."*

### **4.0 Minimum Distance Separation Formulae**

The Minimum Distance Separation (MDS) Formulae developed by OMAFRA establishes setback distances for new or expanding livestock barns and/or manure storage in relation to surrounding land uses.

The formulae provides a 'setback distance' for a new or expanding livestock operation based on the type of livestock, number of livestock, housing type, manure storage type, and surrounding land use characteristics i.e., agricultural, institutional.

Traditionally, the formulae has been applied to all operations, regardless of any unique circumstances, in a consistent manner. It is anticipated that applications for alternative technologies could include one or more of: a) claims of odour reduction from manure storage, livestock housing, or manure processing facilities; b) claims of manure volume reduction negating the need for manure storage. Concurrent with these 'claims' may be a request for a reduction in the setback distance requirements.

Since alternative technologies are not necessarily 'proven technologies', it would be prudent to provide setbacks from surrounding land uses which would reflect the requirements of a conventional livestock operation i.e., one that utilizes a manure storage and housing structure. In the event that the alternative technology does not perform as presented and the farm operator is required to construct or retrofit to conventional standards, the setback distances will be appropriate.

### **5.0 Guidelines for the Review of Alternative Technology Applications**

The primary purpose of the 'Guidelines' would be to provide policy direction to the review body, to the applicant, and to Municipal Council in the review of alternative technology applications submitted as per the requirements of Nutrient Management Plan By-law No. \_\_\_\_\_.

This type of document could conceivably be part of a series of documents available to those submitting Nutrient Management Plans that would provide guidance and outline the specific criteria of the Municipality of Kincardine.

### **6.0 Summary**

At the present time there are a variety of alternative technologies available on the market that can be used to reduce manure odours and/or manure volumes. Many of these technologies are still in the developmental stage or have moved into a preliminary on-farm demonstration/testing phase. A degree of caution is warranted in the review and approval of alternative technology applications.

The Steering Committee has recommended that the Municipality encourage the adoption of alternative technology. The question that remains is how to encourage technology adoption recognizing the lack of 'proven technology' available, while protecting the interests of the Municipality.

Typically there is a lack of financing for alternative technology projects. The use of local economic development funds to co-finance such ventures may payoff with the development of a small scale local industry.

Secondly, as alternative technologies are often touted as being more environmentally friendly, property tax breaks, or local purchase agreements for finished compost or other 'environmentally friendly' products may be options for further exploration.

There also currently a lack of guidelines to assist applicants for alternative technologies in addition to a lack of review criteria to assist the approval body. This could be done on an as-needed basis but there is still an opportunity to develop this type of document before the Municipality receives an application for such.

Lastly, there is a need for political support when applications meet regulations as set out by the review agencies/committees.

## 7.0 Recommendations

**THAT** protection of Municipal interests should be the guiding principle in the review/approval of applications for alternative technology.

**THAT** Minimum Distance Separation Formulae setback requirements for new or expanding livestock operations employing alternative technology be calculated based on the use of conventional agricultural technology.

**THAT** Municipal approval of alternative technologies include the provision of performance standards/guarantees (what the system will do, when, how etc.).

**THAT** all applications for alternative technology, until such time as the technology is considered to be mainstream, be in part co-sponsored by a federal, or provincial department/agency.

**THAT** long-term Municipal/applicant monitoring be a condition of approval to ensure that alternative technologies continue to operate as originally intended.

**THAT** standardized protocols for monitoring the alternative technology performance be developed by a research team selected to oversee each demonstration.

**THAT** financial assurance be required from the proponent.

**THAT** forfeiture of financial assurance and adherence to the Municipality of Kincardine Nutrient Management By-law No. \_\_\_\_\_ be a condition of approval for failure of the technology to meet performance standards/guarantees within a specified time period or adherence to performance standards/guarantees.

**THAT** the Municipality of Kincardine develop "Guidelines for the Review of Nutrient Management Plan Alternative Technology Applications".

## 8.0 References

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Prepared by the "Technological Transfer" Working Group. Published on the world wide web and available at: [http://res.agr.ca/manurenet/en/hmes/agenv\\_plan\\_qc.html](http://res.agr.ca/manurenet/en/hmes/agenv_plan_qc.html).

## Section 6: draft Good Neighbour Policy

### Introduction

The Good Neighbour Policy was developed in response to concerns within the agricultural and rural community. These concerns centred on manure spreading practices, odour, liquid manure storage, potential environmental impacts and water conservation.

### Principle

The Municipality of Kincardine (Municipality) supports the right of landowners, residents and business operators to co-exist in a co-operative and peaceful fashion. The Municipality believes in client self determination and the importance of giving landowners, residents and business operators the opportunity to resolve their own problems and in turn increase their sense of ownership and belonging within their community. The objective of this policy is to work with landowners, residents and business operators to maintain a safe and healthy community.

Poor stewardship practices on the part of a minority of farm operations impact on all members of the community. These behaviours undermine the right to enjoyment of the homes and environment by the majority of residents.

### Policy Intent

The Good Neighbour Policy was developed to achieve pro-active management in addressing these poor stewardship practices. Neighbourhood issues, such as inappropriate manure spreading and excessive odour, should in most cases be resolved by the parties themselves. Like all other citizens within the community, rural residents have a responsibility to resolve their own problems where possible.

The Good Neighbour Policy seeks the following

- To give and encourage landowners, residents and business operators the opportunity to prevent situations which could potentially result in a complaint or grievance.
- To give and encourage landowners, residents and business operators the opportunity to resolve minor grievances with their neighbours, on their own.
- To ensure that landowners, residents and business operators make a genuine effort to resolve minor grievances before soliciting the Municipality's direct involvement.
- In the event that a specific grievance could not be remedied through "Good Neighbour" practices that all landowners, residents and business operators are ensured that the Municipality will act promptly through its Agricultural Advisory Committee to remedy the situation in an expeditious manner.

#### Neighbour Notification

Manure spreading - It has been found that farm operators who inform their neighbours through prior notice of manure spreading activities receive much fewer complaints, and have better working relations with their neighbours than those who do not. To promote this policy:

- Operators are encouraged to engage in "good neighbour" practices by notifying neighbours about manure spreading schedules and/or emergency/unscheduled spreading, and
- Included in each Nutrient Management Plan application kit are sample notification slips/forms that the operator may use to drop in the mail boxes of those neighbours who could potentially be affected by the manure spreading operation.

Erection of New Facilities - Rumours of proposed new large livestock facilities have the potential to create a situation of speculation, distrust and even panic in some communities. The Good Neighbour Policy takes a pro-active approach in reducing the potential for rumours by:

- Requesting that the proponent notify their neighbours about proposed construction of new facilities or expansion of existing facilities. This practice is intended to reduce the potential for rumours, exaggeration and to improve communication between neighbours, both in the short and long term.
- Supplying operators with suitable notification forms which are included in the Nutrient Management Plan application kit for new facilities, and
- Encouraging the operators to use them.

If an operator chooses not to notify his or her neighbours, then upon completion of a Nutrient Management Plan, the Municipality will notify his or her neighbours within a 2 km (1.25 mile) radius of the proposed building and or manure storage facility.

#### Complaint Guidelines

Should a landowner or resident find him/herself faced with a minor grievance, the following steps are required prior to filing a formal complaint with the Municipality of Kincardine.

- Approach the alleged offender either in person or by phone. Explain politely your concerns about the alleged offender's practice, ie level of offensive odour. Often an operator may not realize their practice is offending anyone and therefore it is important to maintain a non-confrontational position at this stage.
- If the complainant feels the matter has not been rectified, they are directed to contact the Agricultural Advisory Committee. A representative from the committee will attempt to arrange a meeting with the alleged offender and the complainant, with the committee representative acting as an unbiased 3<sup>rd</sup> party to verify the issue and legitimize the next step in the process if required.
- If the complainant is not satisfied with the results of the meeting, he/she may submit a formal, complaint in writing, bearing their signature, to the Agricultural Advisory Committee via the Municipal Clerk.

The Agricultural Committee will then address the complaint within the confines of the Complaints Response Process.

## Section 7: Literature Review

The following section is a summary of the literature, existing by-laws, information, videos, and CDROM's etc reviewed during this study. The Literature Review is organized in a bibliographic format. This information may be reviewed upon request at the Bruce County Planning & Economic Development Department.

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## **Appendix A: Document 4 - KBT Nutrient Management Project: Goals, Objectives and Actions Report. 13 December, 1999.**

### **Introduction**

The County of Bruce Planning and Economic Development Department has been contracted by Kincardine-Bruce-Tiverton to conduct the Nutrient Management Plan study on their behalf.

**The goal of this study is to provide the Township of Kincardine-Bruce-Tiverton with recommendations regarding the appropriate manner in which to address animal agriculture in general and nutrient management issues in particular.**

There are four phases of this study. They are:

1. Establish a Township of Kincardine-Bruce-Tiverton Community Vision
2. Develop Goals and Objectives consistent with the Vision
3. Develop Action Item(s) to implement the Goals and Objectives, and
4. Present Recommendations and Implementation Plan.

Phase II of this study (the Phase we are addressing today) calls for the creation of a Steering Committee to assist in producing the community vision and to provide guidance in drafting a set of Objectives and Action Items consistent with the Vision for agriculture in the municipality. It is the view of the planning staff that the Steering Committee take a leadership and ownership role in this part of the study. Therefore it will be the responsibility of the Steering Committee to not only identify the salient points that will make up the Vision, Goals and Objectives, but also to present this draft at the next Open House. This will of course be done with the full assistance of the planning staff of the County of Bruce.

The Steering Committee was selected for, their diverse experience, geographic location within the Kincardine-Bruce-Tiverton community, and the experience they would bring to the table. The Steering Committee is comprised of the following community members:

Murray Clark - is a sheep farmer is a farmer in the Kincardine-Bruce-Tiverton community and President of the Bruce County Federation of Agriculture.

Paul Bennett - is a farmer in the Kincardine-Bruce-Tiverton community and a chair of the Nutrient Management Peer Review Committee.

Tom Fritz - owns several farm properties in the Kincardine-Bruce-Tiverton community and has significant experience through his contracting business in the construction of modern intensive livestock operations.

Steve Eby - is a beef cattle farmer, operating a significant feed lot operation in the Kincardine-Bruce-Tiverton community.

Norm Annetts - represents the interests of tourism and the urban community within the Kincardine-Bruce-Tiverton community

Barry Ribey - is a prominent dairy farmer in the Kincardine-Bruce-Tiverton community.

Supporting staff and subject matter experts are:

David Smith - is a professional planner with the County of Bruce and well versed in the subject matter of Nutrient Management Planning with respect to the legislative process. David has a Masters of Science Degree in planning from the Rural Planning School at the Ontario Agricultural College, University of Guelph.

Brenna McKinnon - is a professional planner with the County of Bruce. Her responsibilities include overseeing planning related issues in the Kincardine-Bruce-Tiverton jurisdiction and brings her experience of the local community with respect to planning to the committee. Brenna is completing requirements for her Master's degree in environmental planning from York University.

Richard Norman - is a professional planner and has been contracted by the County of Bruce to oversee this project. His experience includes working on environmental and rural planning issues along with organizing public participation process meetings. Richard has studied for his Masters of Science Degree in planning also from the Rural Planning School at the Ontario Agricultural College, University of Guelph. Completion of his thesis is expected in Dec 1999.

Chris LaForest - is a professional planner and Director of Planning with the County of Bruce. Chris has a Masters of Science Degree in planning from the Rural Planning School at the Ontario Agricultural College, University of Guelph.

Ulli Pirplow-Rohmer - is a local farmer from Bruce County. He has graciously offered his experiences from farming in Europe, where similar issues have been dealt with. Ulli completed his Master's degree in agricultural studies in Germany.

The responsibility of the Steering Committee is to:

- Review the results and information collected at the Open House/Visioning Exercise and summarize the issues, views, opinions and "recommendations"(a report will be subsequently prepared),
- Collectively distill the information provided and
  - •identify a Community Vision for agriculture in KBT,
  - •draft a set of appropriate Goals and Objectives, and
  - •identify appropriate ways and means of implementing the vision, and
- Draft an Action Plan detailing the Vision and the methods to implement the Goals and Objectives for the Vision.

The 6 questions posed during the Open House/Visioning Exercise were designed to address the 9 issues outlined in the Terms of Reference for this study, put forward by KBT Council.. Those issues are listed below:

- What role should agriculture play in Kincardine-Bruce-Tiverton?

- Should intensive livestock operations be part of the KBT community?
- If so, what restrictions should be place on intensive livestock operations?
- What role should the provincial/county/municipal governments play in regulating agriculture in general, and intensive livestock operations in general?
- What role should the public play in the review of proposed intensive livestock operations and nutrient management plans?
- Should there be a process to handle complaints regarding agricultural operations?
- How should these complaints be handled?
- What evaluative 'models' are available to assist in planning for agriculture and the environment?
- What technologies are available to address odour problems and/or manure volumes?

The following is the draft Action Plan that identifies the goals and objectives goals, and the methods to achieve the goals. The presentation format used follows the 6 Questions that were used to address the 9 issues put forth by council.

To start off the meeting the Committee was asked to: "Define the family, what does it mean to them"?

Responses included that the "definition of the family farm was changing" but again the Committee was asked to define the family farm. There was consensus that defining the "family farm" is a difficult task. The term or concept of the "family farm" means many things to many people. The majority of the members agreed that to them, "family farming" were operations owned and operated by the resident farmer. However, the consensus at the end of the discussion was, that this model is not always feasible.

For example, for a person to get into farming that has not had the benefit of having a "family owned" farm handed down to him, (whether it be, they are the first generation to take up farming, or that he/she comes from a large family of brothers and sisters and the farm has already been given to another sibling), must seek other resources to obtain a farm and in turn this may require the leasing of a large portion of the property required to conduct his/her business. This individual may be one who practices good land stewardship and proper farm practices, but doesn't own the principal portion of the land that he/she is farming. Therefore, when examining intensive livestock operations, the Steering Committee agreed that vigilance was important when making recommendations on how any regulations or restrictions (e.g. percentage of land ownership) would be used to govern farming practice.

There was agreement that farming in general has changed over the last 50 years with significant changes in Kincardine-Bruce-Tiverton over the last 20, and that farming is continuing to change. The concept of the "loop system" was used as an example to demonstrate this change. Further, many farmers are adopting a cooperative approach in their practice of farming by working together in small groups, which gives them some advantages in an effort to remain competitive in a market that is increasingly globally driven.

### **Question 1: What roll should agriculture play in Kincardine-Bruce-Tiverton?**

The Steering Committee agreed unanimously that agriculture has a strong influence on the economic health of the Kincardine-Bruce-Tiverton community and therefore has a significant role to play in Kincardine-Bruce-Tiverton. It was agreed that agriculture was important to all interests in the community and that the institution of the "family farm" was an important part of the make-up of the Kincardine-Bruce-Tiverton rural complexon.

Economic trends in farming are moving towards a global market place with farming in Ontario adjusting or evolving to meet or match those economic trends. One of those responses is the trend for farming to move more towards corporate structure. Based on statistical data collected and information furnished by the Steering Committee, it is recognized that farming in Kincardine-Bruce-Tiverton has an influence in the global market.

It was identified that from a tourism perspective, those people traveling to the Kincardine-Bruce-Tiverton area for vacations did so partly because of the agricultural atmosphere of the community. Further, it was stated that agriculture and tourism can co-exist and that agriculture was integral to Kincardine-Bruce-Tiverton - agriculture forms an integral part of the puzzle.

In response to Question 1, and after some discussion the following draft Vision was produced:

Agriculture plays a major role in Kincardine-Bruce-Tiverton from an economic perspective, a cultural perspective and a community perspective. The Vision for agriculture in Kincardine-Bruce-Tiverton is to be both diverse in the many types of agricultural activities found in Kincardine-Bruce-Tiverton while being strong economically and in character. While promoting the "family farm" culture, both intensive and small scale operations, the agricultural community in Kincardine-Bruce-Tiverton remains pro-active in adopting appropriate advances in agricultural methods, practices and technology, providing they are environmentally sound. The agricultural community in Kincardine-Bruce-Tiverton enjoys and promotes a positive and mutually beneficial relationship with the rural (non-farm) and urban residents of both Kincardine-Bruce-Tiverton and the County of Bruce as a whole.

### **Question 2a: Should intensive livestock operations be part of the Kincardine-Bruce-Tiverton community? Why?**

First off the Steering Committee felt that to address Question 2a, the term "intensive livestock operation" to be used in Kincardine-Bruce-Tiverton had to be defined. The consensus was to identify intensive livestock operations as those over 150 livestock units, or >1.5 animal units/acre.

The information for Question 2a was reviewed and it was found that of the total number of responses for this question, 7 were opposed to intensive livestock operations and 9 were for intensive livestock operations, in Kincardine-Bruce-Tiverton. Again after discussion from the Steering Committee it was agreed that intensive livestock operations should be part of Kincardine-Bruce-Tiverton community, however with control.

### **Question 2b: And if so, what restrictions should be placed on intensive livestock operations in general? Why?**

This question received the most discussion during the Steering Committee meetings. The following are the recommendations proposed by the Steering Committee to address the issue of regulations, restrictions and controls.

- Perimeter foundation drains should be installed around the foundations of liquid manure storage facilities at the time of construction to allow twice yearly sampling (spring&fall) of perimeter water. The municipality needs to establish water sample quality parameters for this testing.

This concept is based on the MOE design that calls for an access point for monitoring and mitigation purposes. Deliberation from the Steering Committee agreed that the requirement of the installation of perimeter foundation drains around the foundations of liquid manure storage facilities would be a valuable regulation to be added to the NMP in an effort to protect the environment should a leak develop within the containment structure. The point that wasn't completely debated was that of how the monitoring would be done, when and by who. Suffice to say that a monitoring plan would have to be developed.

- It is recommended that Council hire a consultant to establish a monitoring plan that would follow scientific process and stand up to the rigors of a "Hearing" or "Tribunal" proceeding.
- This discussion also identified that during excavation any and all sections of a sub-surface tile system exposed would have to be redirected into a closed loop. This would help to ensure that in the event of a leak and migration of manure from a holding facility, the contaminant would not be readily allowed entry into the tile system and subsequent drainage system and river.
- The municipality should sample all known wells within 400 feet of the perimeter of the property on which the facility will be built and any property on which the manure will be spread, (Sampling requirements again to be confirmed). An initial sample program initiated prior to the barn being populated will establish a baseline from which to work, and further sampling at the time of renewal of the NMP will be necessary to monitor for possible contamination. The applicant should be responsible for the cost of this sampling. Interim testing can be done by the well owner through the health unit at his or her discretion.

Discussion from the Steering Committee suggested that this measure would protect both the owner of the intensive operation and the neighbouring land owners. The intensive operation owner is protected by the fact that the base line identifies contaminated wells in existence before the operation goes on-line. The neighbouring property owners are protected by the fact that the base line identifies the water quality of their wells before the operation goes on-line and should the wells become contaminated afterward, the baseline would help to establish liability.

It was established that a monitoring program be introduced and that monitoring occur through the use of test wells, 400 feet from the perimeter of the subject property.

The Steering Committee felt that the existence of abandoned wells as a potential access point for contamination to underground aquifers was a subject for discussion. It was agreed that many old farms have wells that have been abandoned but are still open to the surface.

- Those wells that can be identified should be sealed through an approved process from a professional engineer. It was further agreed that Council should acquire "better mapping" and that they be further developed to manage the issue of old and abandoned well locations. This is a process that would have to be developed over time. Further consensus was in the fact that abandoned wells should be dealt with as part of the permit process.
- Tank Size - When poor autumn weather conditions do not allow for appropriate nutrient application, combined with a need to avoid winter spreading, it is necessary that the minimum safe size for the manure storage capacity be 365 days. To avoid permanent oversize or unlimited storage lagoons from being created there must be a maximum size limit also. The Peer Review Committee recommends 1000 days maximum, to allow the developer the option of building a single storage tank to accommodate an initial barn plus a second barn to be built at a later date as this is a common practice. This size would also permit extra storage capacity for those individuals who wish to have it. The requirement to have a cover on all manure storage facilities needs to be clarified and expanded upon in the by-law. The Peer Review Committee suggests that there are many forms of cover that should be considered including organic (straw etc), floating, concrete, and solid dome type. An additional recommendation was made to have the manure inlet pipe enter the storage tank with a 90 degree elbow extension so that the incoming effluent will enter the tank below the surface of the stored manure and thereby not to disturb the crust.

While the Steering Committee agreed that tank size should allow for 365 days storage minimum and 1000 days maximum for liquid waste, there was a need for design standards and criteria for solid waste. The Steering Committee felt that while they were qualified to confirm the need for these standards, they were not qualified to define them and that would be a project to be commissioned by council.

Discussion within the Steering Committee confirmed that regardless of the recommendations put forward here, they also deal with

storage of the different types of manure found in other intensive operations, such as cattle and poultry and not just stop at sow operations.

The issue of pollution from the intensive operation vs the small operation was discussed. The large farmer today, by virtue of having to abide by a Nutrient Management Plan has ensured that they have the technology in place to manage waste. However the smaller farmer, has no restrictions what so ever placed on them.

- It was agreed that all building permits should require a Nutrient Management Plan regardless of the size of the operation. This should be implemented through a phased approach and be in place by 2001.

Further, existing small operations should be encouraged to practice environmentally responsible practices.

Land Ownership - Land ownership does not guarantee good land stewardship. It is more important that the nutrient management plan be complied with than the farmer be required to own the land needed to spread manure on. To that end we need a NMP by-law that is fair, understandable and enforceable rather than one that requires ownership of land as a safety factor.

The issue of land ownership was heavily deliberated. It was recognized that while most farmers who own their own property generally practice good land stewardship, it didn't ensure that all owners of their own properties would follow suit. Further it was recognized that a high percentage of land ownership would impede or limit other responsible farmers from both expanding their operations and simply maintaining them.

- The consensus within the Steering Committee was to opt for a lower requirement for land ownership, (around 25%) and adopt stronger monitoring and enforcement of the whole process.

During this discussion, the question was raised; while a Nutrient Management Plan is enforceable, who enforces it? It is fine to have the controls, restrictions and regulations in place, but who monitors, polices and enforces the rules?

This raised the point of whether council should hire or train someone to properly deal with the enforcement of this by-law,(i.e. train the by-law enforcement officer or building inspection official on NMP enforcement).

It was identified that the MDS II could be used to further restrict the proximity of barns to houses, including neighbouring houses.

- It was identified that the MDSII formula should be examined with recommendations made to council that address the issue for the need that the formula be applied consistently.

That is, while the numbers of livestock increase arithmetically the MDS distances only increase logarithmically. Therefore the directions of MDSII must be applied consistently. However, caution should be exercised when making any recommendations for changes as they potentially could be detrimental to the small farmer in the longer run.

- The Peer Review Committee recommended that the OMAFRA checklist be used as a baseline for the plans submitted to the municipality. Using this checklist would ensure that all the plans will be laid out the same, be understandable and straight forward for review.

It was high lighted that the flexibility provided in this checklist is beneficial to all concerned.

Additional discussion suggested that the immediate neighbouring public should receive some form of notification that an intensive operation is being planned for development. It was questionable whether a public meeting with council was fair and even achievable.

- Therefore, the Steering Committee agreed that having the proponent of the intensive operation have "kitchen table meetings" with his/her neighbours enforced through the NMP.
- From a planning perspective it is recommended that council utilize a zoning designation of A2 zone along the lakeshore and around hamlets and urban areas. Standard distance will be addressed by council.

An opportunity for Council to establish an A2 zone and to address the restrictions of agricultural operations allowed within proximity of the zone exists, as Kincardine-Bruce-Tiverton will be conducting zoning updates. This issue can be addressed adequately and publicly through an open house process.

- Manure spreading practices. The Steering Committee recommends incorporation of manure when possible.
- Recommendation to council to update hazard mapping to protect sensitive areas from spreading and building.
- While it is understood that the official building inspector is on site at critical points during construction, the design specifications and construction requirements for some facilities in modern intensive livestock operations are beyond the building code. Therefore the structures built for intensive livestock operation are generally engineered projects and therefore approved by the engineer. For manure storage and liquid manure storage in particular should require 3<sup>rd</sup> party independent inspection by engineer to inspect excavation, soil compaction test. foundation.

While this recommendation may appear to add additional financial burden on the part of the proponent for such a project, it actually help to protect him/her from poor quality workmanship.

There was question as to providing an adequate complaint process. The Steering Committee established the following guidelines for that process:

- Offences section should have short form wording under the provincial offences act so the offender can be charged- being in violation of the NMP by-law should he/she be found knowingly and willfully negligent. The investigation must follow due process, due diligence, rules of evidence and process etc., and the use of a formalized record keeping process in place.

Recommend that Council publish a contact list for different types of complaints that may arise with intensive livestock operations of any discipline.

- Recommend to council to implement recommendations immediately. However the interim control by-law should be extended until the NMP bylaw, zoning and other municipal legislation are in place, given reasonable timing to implement the changes.
- Recommend to Council that the NMP by-law be Ammended in section 7.0 to "ban" earthen manure storage lagoons.

**Question 3: What role should the provincial/county/municipal governments play in regulating agriculture in general, and intensive livestock operations in general? Why ?**

The Steering Committee agreed that management and enforcement of the Nutrient Management Plan should stay at the local level. While there was concern from some members of the community that there should be higher levels of government involvement, by both the county and province, it was felt that each municipality has its own character, issues and problems, (KBT is not like the North Bruce Peninsula) and therefore those issues would be better addressed by local government. To have a plan implemented at the county level would eventually prevent local issues from being adequately addressed.

- There is concern that there is a loss of continuity with the election of a new council and therefore a loss of experience etc. Therefore it is felt that the Peer Review Committee should be composed of 8 individuals (no less than 5), chosen by Council, representing the commodity groups, peers and at least on individual that is not involved in agriculture, (that is someone from the urban community). Therefore rules of succession must be put in place. That is, to allow for the change in staff overlapping so that you don't lose the whole committee at one time and the experience with it.

PRC should have adequate training paid for by the municipality. Council formally establish a long term training budget.

**Written responses to Question 4a: What role should the public play in the review of proposed intensive livestock operations and nutrient management plans?**

It was recommended that the public participate in public forums and open houses. Utilize the Nutrient Management Plan Peer Review Committee.

- The Steering Committee recommends that Council make the NMP process more public. Plans should be made available to public. Should a community member wish to receive a copy of a relevant document the request should be made to Peer Review Committee. There will be a cost for this request which will be calculated and assigned by Council.
- Any amendments to the nutrient management by-law should be referred to the Peer Review Committee for comment.

**Question 4b: Should there be a process to handle complaints regarding agricultural operations? Why?**

Yes, to be able to address community concerns about potential and actual spills, and poor farm practices in an efficient manner.

**Question 4c: How should these complaints be handled?**

- First, spills are directly referred to MOE. However in consideration of intensive operations:
  - i. Neighbour should first approach the potential violator about the complaint (ie neighbour is hauling too much manure to one field).
  - ii. Should this not remedy the situation, the complaint is then referred to committee (which is the peer review committee).
  - iii. The Committee reviews the complaint and the chairman assigns individuals from the committee to investigate.
  - iv. Investigators to report back findings and Committee deliberates on choice of mitigative measures.

Offences section should have short form wording under the provincial offences act so the offender can be charged- being in violation of the NMP by-law.

- In addition it was agreed that a "Good Neighbour Policy" should be established. That complaints are dealt with through a hierarchy approach. The individual who feels that they are being affected should approach the possible offender before they go to a higher level for assistance.

**5a: Should the use of new technologies either presently available or under development, that address problems, such as odour problems and/or manure volumes be encouraged? Why?**

Yes. Appropriate new technologies have the potential to reduce the environmental impact of an operation and/or improve the economic competitiveness of an operation.

**5b: Should the use of those technologies be encouraged for all farming operations? Why?**

Yes. Again technologies have the potential to reduce the environmental impact of an operation and/or improve the economic competitiveness of an operation.

The challenge is to make allowances in the process to actually encourage the use of new technologies. The regulatory process must allow for the consideration of new technology.

- PRC come up with a set of policies that encourages and allows for the testing of new ideas. Once in place, a new concept or technology would be referred to the Peer Review Committee for a New Technology Application. Technology would be approved for testing through independent 3<sup>rd</sup> party review. Council would pass an exemption to NMP by law if needed as separate clause in by-law... **or apply for a research permit...**

Within this process the MDSII would not be exempt. Contingency planning would be established and implemented on a case by case basis. A bond would be put in place by the proponent to be used at the discretion of the municipality but for mitigative purposes should there be irreversible problems with the "new technology project". The bond would be calculated based on an estimate for the contingency strategy to be implemented.

A review period of the new technology performance would be established for a specified period on a case by case basis. The Peer Review Committee has the latitude to call in pertinent subject matter expert when required to assist in the review.

#### **Question 6: Do you have additional concerns or comments that you feel is important and has not been addressed here?**

This question was used to allow members from the public to address and issue or concern that had not been covered in the 5 questions addressing the 9 issues set by Council.

- The issue of existing buildings on property where new building is built under the regulation of an NMP require attention. NMP is designed on new building to be constructed. If an existing building, presently not addressed in the plan is later rented out, it potentially could put the proponent in non-compliance with their NMP. An amendment to the NMP should be allowed when appropriate for the provision of the use of other buildings on the property. Such incidents should be addressed on a case by case basis.

MOE legislation states you can use as much water as you require as long as you do not impact on your neighbour. There is no estimate on the amount of water being taken nor the amount which will be taken. MOE issues permits and farmers are exempt. Water issues are a provincial jurisdiction.

The Steering Committee recommends that appropriate water conservation and management, practices are promoted and used.

The Steering Committee does not have the expertise to address the issue of water use. It is agreed that water use is an issue and is of significant concern. The Steering Committee recommends that council should remain vigilante about water use that future supply is guaranteed. Rather than get into a situation like Waterloo Region who has run out of water.

- Council should promote water conservation practices in intensive farming practice through a form of financial rebates.
- A standardized application kit should be provided to all applicants wishing to submit a NMP. This should include all the necessary forms, any good neighbour policies and change of plan forms. All plans must have the pages numbered from front to back for clarity. The layout of information should be by field for the full three years of the plan or lumping all the fields together for each year.
- The Steering Committee recommends that the present OMAFRA standards are more designed for manure disposal than nutrient management and that the land needs a rest to be properly maintained.

The Committee also feels that the proximity to Lake Huron and the subsequent tourist industry make our diligence in these matters even more important than in other communities. There is also the matter of inflexibility in the plans to allow for changes in crop inputs once the plans are in place. A requirement to use no more than 80% of the allocated land for manure application in any given year would go a long way to solving these problems. Small changes could then be submitted to the N M Committee annually

- Presently manure cannot be sold or given away under the present by-law. An amendment to the by-law is recommended to allow this. It would be appropriate so long as the destination of the manure is documented and a NMP for the removed manure is attached to the original plan.