INNOVATION

Planting the Seeds for Farm Innovation: A Guide to Achieving Flexible Land Use Policy in Ontario's Greater Golden Horseshoe

Chris Dickinson, Anna Henriques, Jennifer Laforest, Nisha Shirali, Jill Sonego, and Evan Weinberg 2010

Table of Contents

List of Figures:

List of Tables:

Preamble

In September 2009, Sustain Ontario, under the directorship of Lauren Baker, engaged a group of graduate students studying at Ryerson University to explore how land use policies in Ontario's Greater Golden Horseshoe (GGH) affect the abilities of farmers in the area to innovate on their farms. The project was intended to further Sustain Ontario's efforts towards helping to create a sustainable food system— one that is equitable, ecologically responsible, and financially viable. This project was intended to expand the knowledge about the effects of land use planning policy on the economic, social, and environmental aspects of farming, with special attention paid to the barriers that land use policy presents for farm innovation.

The project was undertaken in two phases. In the fall semester of 2009, a group of 6 students explored the issue, defined the problem, and developed an approach to be used to tackle the problem. The second phase was then undertaken by a different group of students in the winter semester of 2010. The second group of students expanded upon the work done by the previous group, performed further analysis, and proceeded to make recommendations as to how land use planning policy can be altered to be more flexible such that it can allow for farm innovation. This guide details their analysis and recommendations.

Purpose of this Guide

The primary purpose of this guide is to educate Sustain Ontario about how land use planning policy in the GGH affects the ability of farmers to innovate. It is intended to guide Sustain Ontario's efforts in working toward its mandate by providing recommendations with respect to priority issues to be addressed.

In addition to recommendations for Sustain Ontario in particular, this guide contains land use policy recommendations that are directed at municipal-level land use policy-makers. The guide is intended to serve as a useful tool for policy-makers who may not be well-versed in agricultural land use policy or for those would benefit from guidance in the subject area.

1.0 Introduction

> "If a society does not value its farmers and farmland, then it does not value the capacity to grown its own food, and both eventually will be lost" (Lister, 2007, p. 160).

Agriculture represents a case of "use it or lose it." For reasons of food security, economic viability and cultural value, agriculture is an important practice to support, sustain, grow and celebrate in the province of Ontario (Britten et al., 2009). At present, farmers are experiencing mounting economic uncertainty. Competition from large industrial farms is stiff and development pressure is exerted on farms near urban areas. In addition to this, the younger members of farming families are not entering the agricultural sectors at the same rates that their predecessors did. These factors place farmers' economic viability and the agricultural industry in Ontario as a whole in jeopardy. If farming is not profitable, farmers will be tempted to cash out and sell their land to developers, thus ending the land's productive life.

Recent studies suggest that agriculture in Ontario is at a crossroads (Britten et al., 2009). North American farms have been increasing in size and decreasing in numbers for some years now. Many smaller-scale farmers have been unable, or unwilling, to industrialize to the extent necessary to compete with larger farms. Often this has meant that smaller-scale farmers have found sustaining agricultural livelihoods difficult, but with the right elements in place, smaller-scale farmers can survive and even thrive (Britten et al., 2009; Gray, 2005, p.23). The industry can either decline further, leaving Ontarians to continue their reliance on food from elsewhere for their subsistence, or the choice can be made to reinvigorate the agricultural sector and reap the countless benefits – economic, social, cultural, and environmental – that will come from strengthening the agricultural sector (Britten et al., 2009).

There are many ways that the prospects for agriculture in Ontario, and in particular the prospects for smaller-scale farmers, can be improved. One way is to open the door for farmers to be innovative on their farms by allowing them to do new things and practice less traditional forms of agriculture. Farmers that try to alter their land to support the growth and sale of new products often come up against land use policy barriers. Currently, the process of challenging these barriers takes patience as well as considerable time and money, and the outcome does not always turn out in the farmers' favour.

Many of the barriers to on-farm innovation are created by land use policy-makers with the best intentions. Land use policy-makers are given the difficult task of finding a balance between regulation and flexibility. Potential harm to neighbouring properties and the environment need to be minimized while still ensuring that agriculture is profitable for farmers. This is no easy task to accomplish through land use regulation. However, many agricultural land use policies were designed years ago and could be updated to include flexibility without risking harm to neighbours or to the environment in general.

1.1 Innovation and Viability

Innovation is seen as a way that smaller-scale farmers can compete with larger operations and remain viable. With respect to farming, innovation can be defined as: "a new method of farming that improves a farmer's economic viability while maintaining the quality of the agricultural lands." To clarify further, a viable farm is one that provides enough income to maintain its operations while producing a reasonable profit for the farmer.

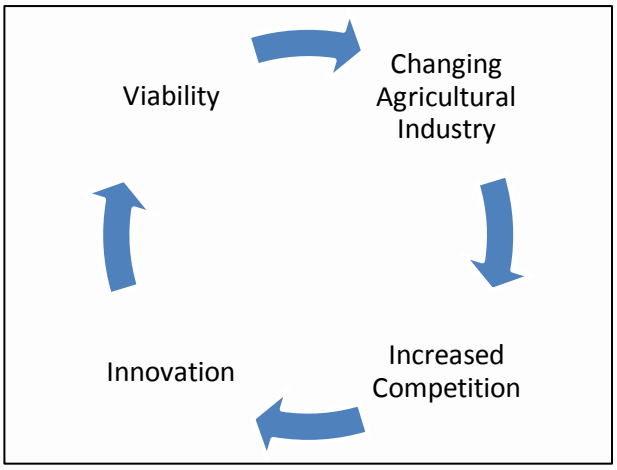

Figure 1: Innovation / Viability Cycle

1.2 Approach

This project was approached from a local perspective. However, it also incorporates international examples. The overall goal of this project was to determine land use policy barriers to on-farm innovation and to make recommendations as to how to make policy more flexible to eliminate, or at least minimize, these barriers.

The first step of the project was to conduct a literature review with respect to agriculture in Ontario, including current challenges, opportunities, and future trends. The literature review also included a scan of examples of international best practices in the realm of flexible agricultural policies.

The second step of the project was to review local policies and determine local best practices. There are various layers of land use policies within the Ontario planning system, such as provincial policies, regional policies, and municipal policies,

Figure 2: Process Diagram

and a decision had to be made as to which level of policy the project was going to target. Considering that farmers often face challenges when dealing with *local* policies, a decision was made to focus on policy at the *lower-tier municipality* level.

It was necessary to define the geographic scope of the project. The geographical areas selected for study were *Niagara Region*, *Simcoe County*, and *Waterloo Region*. These regions were chosen due to the richness and diversity of agricultural products they produce, their close proximity to urban areas, and the resulting large pressure for development that they face. Please see Appendix B for a detailed overview of agriculture within the 3 study regions.

A random stratified sample was performed to select 6 lower-tier municipalities per region for further study. The selected municipalities included:

- Cambridge, Kitchener, North Dumfries, Waterloo, Wellesley, Wilmot, and Woolwich within Region of Waterloo
- Bradford-West Gwillimbury, Essa, Innisfil, Midland, Penetanguishene, Tiny, and Severn within Simcoe County
- Fort Erie, Niagara-on-the-Lake, Pelham, St. Catharines, Welland, and West Lincoln within Niagara Region

As per the recommendation of Britten et al. (2009), the policy review was to be centered on 5 policy issues: Minimum Distance Separation (MDS), Minimum Farm Size, Value-Adding, Severances, and Secondary Uses. The agricultural policies in each municipality's Official Plan (OP) and Zoning By-Law (ZBL) with respect to the 5 policy issues were studied and documented in a matrix. This matrix allowed for a detailed comparison across both municipalities and regions with respect to the 5 policy issues. Please see Appendix E to view the comparison matrix.

The matrix proved to be a very effective tool for comparison and allowed for a more refined identification of policy issues with respect to barriers to on-farm innovation. It became clear that some of the policy issues previously identified were less important than the policy issues that emerged from the comparison. 4 policy areas were selected for further analysis: MDS, Minimum Farm Size, Policy Language, and Agricultural Zone categories.

The matrix was reconfigured to suit the new policy areas. By comparing policies across municipalities and regions, the more flexible policies were identified and documented.
By drawing upon the information gleaned in the literature review (including international best practices), the best practices within the municipalities were identified. These best practices were used to make recommendations for land use policy.

1.3 Overview of Land Use Planning in Ontario

To provide Sustain Ontario with a clear picture of how land use policy affects on-farm innovation, the following section will briefly describe how the land use planning process in Ontario works.

Land use planning refers to the management of land and resources (Ministry of Municipal Affairs and Housing, 2008). In the Province of Ontario, the land use planning framework provides for a provincially-led and top-down process. Under Section 3 of the Planning Act, the 2005 Provincial Policy Statement (PPS) provides direction on land use planning matters which are of related interest to the province (Ministry of Municipal Affairs and Housing, 2008). In March 2005, the province of Ontario stated that the plans put forth by individual municipalities "shall be consistent with" the new policies outlined in the PPS (2005). Municipalities then draft their OPs, which are visions that outline how growth and land will be managed and directed in the future, keeping in mind the objectives stated in the PPS. Public consultation and participation from other stakeholders is integral when drafting an OP.

OPs are policy documents that are intended to guide, but not determine, growth and development in a municipality. To assist in every-day planning decisions, municipalities rely on ZBLs. These policies specifically state how land will be controlled and utilized in a particular municipality. For example, ZBLs state where buildings can be built, how they can be used and how tall they can be (Ministry of Municipal Affairs and Housing, 2008). For more information on land use planning in Ontario, please visit the Ministry of Municipal Affairs and Housing website at http://www.mah.gov.on.ca.

PROVINCIAL POLICY STATEMENT (2005)

ESTABLISHES VISION FOR PROVINCE

OFFICIAL PLAN

ESTABLISHES VISION FOR MUNICIPALITY

ZONING BY-LAW

IMPLEMENTS OFFICIAL PLAN

2.0 Priority Issues

4 policy areas have been identified as being particularly restrictive to on-farm innovation: Agricultural Zoning, MDS, Minimum Farm Size, and Policy Language. These issues, as well as recommendations to resolve them, are detailed in the following sections.

2.1 Agricultural Zoning

\färm\

ZBLs play a critical role in land use planning as they implement the goals and vision of a municipality as set out in the OP policies. ZBLs are used to outline permitted uses and development standards (parking requirements, setbacks, lot size, density, etc) with respect to a particular property. For more specific information on ZBLs, please visit http://www.mah.gov.on.ca/Page1758.aspx.

The manner in which municipalities write and interpret ZBLs has a direct impact on the agricultural industry and the viability of farms. A review of the ZBLs in the case study areas has provided some insight as to what some potential barriers to on-farm innovation and viability may be. The following outlines some of our findings, issues and recommendations with respect to agricultural zoning and potential barriers for farmers in our case study areas.

2.1.1 Outdated ZBLs

Many of the ZBLs currently in effect in Ontario municipalities may have been written based on assumptions about the meaning of agriculture in the past. Given that the agricultural industry has evolved and diversified since the inception of many ZBLs, the context-specific nature of ZBLs can make it difficult to farmers to innovate and improve their viability today. ZBLs that regulate the land in which farms operate should be reflective of the diversity of farms and the changing business needs of farmers.

It is worth noting that many of the municipal OPs in the case study areas contained very progressive polices for agricultural land use. It was found that these policies were not always translated and implemented in the accompanying ZBLs for the municipalities. This may be due to the fact that many municipalities are currently working on revising their OP policies for conformity with the Places to Grow Plan and therefore, have not had an opportunity to update their ZBLs as of yet. Similarly, some municipalities may not have the resources (i.e. staff) to update their ZBLs as often as they should and would like to.

Policy Recommendation: Municipalities should update outdated ZBLs so they are more reflective of the agricultural industry today, making them more conducive for on-farm innovation and improving viability.

2.1.2 Writing and Interpreting ZBLs

ZBLs are typically written in a very prescriptive manner, permitting very specific uses rather than the general use itself. For example, a ZBL may permit specific uses such as greenhouses for growing vegetables rather than permitting the general use of agriculture. This can be seen as a strength in the sense that it recognizes the uniqueness of different agricultural uses and

does not prescribe a one-size-fits-all solution. This approach allows development standards such as minimum lot size, setbacks, densities, etc to vary depending on the specific nature and needs of the uses permitted.

However, if permitted uses are too specific, the ZBL may be seen as too prescriptive and may unintentionally shut out certain uses. To further illustrate this point, a ZBL that permits only a greenhouse for flower growing, a cattle farm and a vegetable farm would mean that a dairy farm would not be able to operate on a property with this zoning in place. The alternative approach would be to permit general, broader uses such as agriculture and agriculture-related uses, for example. However, with this approach, it is critical that it is clearly understood what is meant by such broad and general terms. This would require clear definitions within the ZBLs to define what the municipality means by the terms. If permitted uses are too broad and undefined (or inadequately defined), the ZBL may be too open for interpretation which may undermine the ZBL and its intent to preserve agricultural land for sustainable agricultural uses.

\färm\

Policy Recommendation: Municipalities should strive to strike a balance between specific and general agricultural uses when writing ZBLs to promote on-farm innovation and viability.

2.1.3 Euclidean Zoning

The municipal ZBLs that were reviewed in the case study areas are based on a Euclidean zoning framework. The use of this framework goes back to the early 20th century and is a commonly used zoning framework by planners in North America today. The Euclidean framework places an emphasis on the use of the land with the intent of separating uses that are deemed incompatible. For example, residential uses and areas are often separated from industrial uses and areas. This framework has been criticized for being inflexible, overly prescriptive and not reflective of the planning needs of today which is more about the mixing of uses.

The Euclidean based zoning framework can be seen as a barrier to on-farm innovation and viability due to its inherent intent to separate uses that are deemed incompatible. The deemed incompatibility of uses is often based on assumptions about uses that may or may not be true. Furthermore, most planners in Ontario have only worked with the Euclidean zoning framework. This framework can result in ZBLs being written and interpreted by planners in a narrowly focused manner.

Policy Recommendation: Planners should consider other land use regulation frameworks, such as performance based zoning, as an alternative to the Euclidean zoning framework.

2.1.4 Performance Based Zoning

Performance based zoning is a highly flexible alternative to Euclidean zoning. It places the emphasis on the form of use, with respect to scale and intensity, rather than focusing on the use itself. Specifically, it looks at the performance of a parcel of land and the land's impact on surrounding areas. Using a points-based system, points are distributed to a given use for

meeting predetermined zoning goals. For more information on performance based zoning and best practices, please visit http://planningwiki.cyburbia.org/Performance_zoning.

The performance based zoning framework has pros and cons; the best choice for municipalities might be to use a hybrid approach, drawing on the strengths of both the Euclidean and performance based frameworks in order to promote on-farm innovation and farm viability in Ontario.

\färm\

2.1.5 Agricultural Zone Categories

Most municipalities within the case study areas had one or two agricultural zone categories. Conversely, some municipalities had 3 or more agricultural zone categories. In recent years, increased awareness of the diversity of agriculture has led to the suggestion of elaborating the agricultural zoning category to include several types of agricultural zones. This would allow municipalities to recognize and accommodate different types of farms/agricultural soils and to vary development standards depending on the zone and the intended agricultural use. The alternative would be to have one agricultural zone uses and development standards that would apply to all farms, irrespective of use (scale, intensity, etc) and soil conditions. The intent of this portion of the guide is not to advocate for one agricultural zone or more. Rather, the intent is to provide information on the strengths and weaknesses of both scenarios and to provide examples.

The chart below outlines each municipality in the case study areas and their respective agriculture zone(s).

Table 1: Agricultural Zone Categories

MUNICIPALITY	AGRICULTURAL ZONE(S)
Region of Waterloo	
Waterloo	Agricultural Rural
Kitchener	Agricultural
North Dumfries	Agricultural
Wilmot	N/A
Woolwich	Agricultural
Cambridge	Agricultural
Wellesley	Agricultural Agricultural Institutional Rural Mixed Use/Agricultural Cluster
Simcoe County	
Bradford West Gwillimbury *	General Agricultural Special Agricultural Rural Commercial Rural Industrial
Midland	Rural Restricted Rural
Innisfil	Agricultural General

	Agricultural Intensive Agricultural Marsh
Severn	Agricultural Rural
Penetanguishene	N/A
Essa	Agricultural Rural Commercial Agricultural
Niagara Region	
St. Catharines	N/A
Pelham	Agricultural
Niagara on-the Lake	Agricultural Agricultural Purposes Only
Fort Erie	Agricultural Rural
Welland	Rural Agricultural Agricultural
West Lincoln	Agricultural Restricted Agricultural

Table 2: Agricultural Zone Categories

For more information on each of the municipal ZBL above (permitted uses, development standards, etc), please refer to our ZBL Matrix.
* Bradford West Gwillimbury has 3 ZBLs due to amalgamation of towns; the referenced bylaw is the former Township of Tecumseth ZBL.

Best Practice – Single Agricultural Zone

The Township of Woolwich (Region of Waterloo) is an example of a municipality that has a single agricultural zone. In this agricultural zone, the following is an example of the use that are permitted: sales, on-farm businesses, research farming, value added farm uses, agri-tourism, etc. This is a good example of a single agricultural zone with permitted uses that are not too specific or too general/broad. For instance, on-farm businesses and value added farm uses are listed as permitted uses. 'On-farm business' is defined in the ZBL as:

> "…..a woodworking shop (any fabricating process which primarily involves wood, such as furniture-making, woodbending, pallet manufacturing) or a farm-related, dry industrial or commercial activity providing a good or service primarily geared for farm operations, including blacksmithing and which is located on a farm" (Township of Woolwich, 2009, s. 2.89b).

The prior definition provides some clarity with respect to the meaning of the term, yet it does not overly define it in a manner that leaves no room for flexibility in the interpretation of the term. The latter part of the definition "……or a farm related, dry industrial or commercial activity providing a good or service primarily geared for farm operations……" could relate to a variety of farm related uses and provides some flexibility.

In addition, the Woolwich (Region of Waterloo) single agricultural zone is a good example in which the range of permitted uses is not outdated and based on old assumptions of the nature and dimensions of agriculture. The range of permitted uses is quite reflective of the diversity of farms today, accommodating the changing needs of farmers and their need to make farms more innovative and viable.

\färm\

Best Practice – Multiple Agricultural Zones

The Town of Bradford West Gwillimbury (Simcoe County) is an example of a municipality that has a ZBL (they currently have 3 and are working on consolidating them into one) with multiple agricultural zones. This ZBL (former Township of Tecumseth ZBL) has various agricultural and agricultural-related zones, permitting a wide range of uses with varying development standards depending on the zone and the permitted uses. The following outlines the various zones and their corresponding permitted uses:

General Agricultural Zone

Permitted Uses: Agriculture; intensive agriculture; market gardening; conservation uses including forestry, and other activities connected with the conservation of soil or wildlife; wayside pit; market garden; sod farm; home occupation/industry; accessory buildings/uses, etc.

Special Agricultural Zone

Permitted Uses: Agriculture; intensive agriculture; market gardening; and conservation uses including forestry, reforestation, and other activities connected with the conservation of soil or wildlife; wayside pit; market garden; piggery; vet clinic/hospital; sod farm; feed lot; home occupation/industry; accessory buildings/uses; riding stable or raceway, etc.

Rural Commercial Zone

Permitted Uses: a farm implement dealer; an agricultural equipment repair outlet; a farm auction barn; a fertilizer mixing and sales establishment; a livestock exchange; a nursery; accessory buildings/uses, etc.

Rural Industrial Zone

Permitted uses: a bulk fuel dealer; an agricultural produce warehouse; a feedmill; a sawmill; an abattoir; a public garage; a service shop; a cartage, express, or truck terminal; an assembly operation; a business or professional office; an automobile body shop; a lumber yard; accessory buildings/uses, etc.

Although permitted uses listed in some of the agricultural zones are rather specific and inflexible (e.g. sod farm) and are not necessarily reflective of newer farm typologies, this ZBL was chosen for the variety of uses it permits in a single zone. The Rural Commercial Zone and the Rural Industrial Zones are two examples in which different categories of uses (eg. commercial and agricultural) are combined together instead of being deemed incompatible and

separate under a traditional Euclidean zoning framework.. This is important given the evolving nature of the agricultural industry in Ontario and the uses that farmers are wanting to introduce onto their farms in order to increase farm innovation and viability.

2.1.6 Policy Recommendations

There are pros and cons to single and multiple agricultural zones. It is extremely important when drafting ZBLs that municipalities be aware of the agricultural community and industry for which they are drafting the ZBLs. This is critical in order to create ZBLs that respond to the needs of the farmers in order to increase farm viability. By undertaking a municipal agricultural assessment and thorough public engagement with farmers, municipalities will be better educated and informed about the opportunities and challenges that their farmers face. This, in turn, will enable municipal planners to make informed decisions with respect to the zoning issues mentioned above and what is ideal for their municipality in a context-specific manner. A single agricultural zone may be appropriate for one municipality but not for another.

Overall Recommendation: Municipalities should be aware of the existing agricultural community, and their needs, within their jurisdiction. This will enable municipalities to draft ZBLs that are context-specific and responsive to the needs of local farmers.

2.2 Minimum Distance Separation (MDS

The growth and intensity of livestock operations in Post-World War II North America resulted in new agro-industrial land use conflicts. In order to address and manage new kinds of land uses, new distance measurements as well as municipal and provincial policies in Canada were implemented. The most robust of tools in Ontario was the 1970s document 'A Suggested Code of Practice.' This document not only suggested that Euclidean planning could solve the problem of nuisance related to intensive livestock operations, but implemented scientific formulas (MDS I and MDS II) to determine whether or not development applications for livestock facilities were appropriate. The application of standardized MDS formulae to all livestock operations in Ontario over the past forty years has had two effects on the characterization of farms in Ontario:
a) farms became single-use, serving either as agricultural or livestock operations, or
b) livestock operations became increasingly undesirable, and incompatible with surrounding land uses, effectively isolating them from communities, and requiring them to be located on increasingly large parcels of land.

2.2.1 MDS as a Barrier to Innovation and Viability

Livestock operations in Ontario have evolved both technologically and economically since the 1970s. According to the Ministry of Agriculture, Food and Rural Affairs (2009), farms with 3,000 or more pigs (or 1,200 cattle) are increasingly common and the definition of 'intensive farm' might evolve soon to characterize farming operations with 10,000 pigs (or 1,500 dairy cows). New information from Statistics Canada (2007a) indicates strong decreases in the number of farms and the growing size of livestock facilities. As a result, the Minimum Distance Formulae have been amended twice recently (in 1995 and 2006) to accommodate the evolution of livestock operations. According to the Ministry of Agriculture, Food and Rural Affairs, "MDS setbacks increased about ten to twenty per cent compared to the setbacks in the 1995 version" (OMAFRA, 2010a). The formula is now set to be reviewed every 5 years with the anticipation of the continued centralization, intensification, and technological evolution of livestock operations.

It is precisely the continued tailoring of policies to intensive agricultural operations and the persistence of land use restrictions designed to limit conflict between livestock and other land uses which creates a land use barrier to on-farm innovation. Minimum Distance Formulae (MDS I and MDS II), in their strict application, do not allow for different scales of livestock operations to be located on and adjacent to other agricultural, residential, or commercial land uses. The integration of uses, including livestock at smaller scales, is a characteristic of farming innovation, and a key component to ensuring the vitality of smaller-scale farming in today's economy (Donald, 2009).

2.2.2 The Application of MDS in Case Study Regions

The majority of municipalities in Ontario have firm policies set out in their OPs to mandate that livestock operations adhere to the MDS Formulae. Only in some rare instances have municipalities successfully altered their application of MDS. Municipalities must also follow the guidance of Regional OPs, which themselves establish the use and adherence to MDS. The following section details the approach to MDS taken in the three case study areas' Regional Plans:

Table 3: Application of MDS in Case Study Regions

Regional Municipality	Relevant OP Policy	Relevant OP Section
Niagara Region	"It is **required that local official plans and zoning by-laws use the Minimum Distance Separation Formula** of the Agricultural Code of Practice as their standard for livestock operations." "Rural Clusters are permitted on private services subject to the more detailed descriptions in the Township of West Lincoln Zoning By-Law and the Policies Contained in the Township of West Lincoln Official Plan"	6.A.16 12.50
Simcoe County	**"All new land uses**, including the creation of lots and new expanding livestock facilities, **will comply with the Minimum Distance Separation Formulae** as prepared by the Province, and decisions on the location and form of the subdivision and development should be made with an objective of protecting agricultural areas for agriculture and minimizing land use conflicts between agriculture and other uses."	3.3.13
Region of Waterloo (OP Updated June 16th, 2009)	"New land uses, including the creation of separate lots, expansions of existing lots and the development of new or expanding livestock facilities, **will comply with the minimum distance separation formulae**."	6C

Regional Municipality	Relevant OP Policy	Relevant OP Section
	"In order to preserve and support the historical social, economic and cultural needs of a unique segment of the region's existing rural community, which relies on horse-drawn vehicles as their primary means of transportation, the Township of Wellesley may designate a limited number of sites in its official plan to permit the development of Rural Mixed-Use/Agricultural Clusters. Rural Mixed Use/Agricultural Clusters may also contain lots for small-scale schools, places of worship and associated cemeteries, as required to support this segment of the rural community."	6.F.1
	"[development must] be in conformity with the minimum distance separation formulae between Rural Mixed-Use/Agricultural Clusters and adjacent agricultural uses."	6.F. (I)

Table 4: Application of MDS in Case Study Regions

2.2.3 Best Practices in Ontario

A further analysis of the municipalities within these regions reveals some best practices with regard to the management of livestock operations and the consideration for smaller or mixed-use farming operations.

In the Township of West Lincoln (Niagara Region), there are two separate Agricultural land designations, "A1"-Restricted Agricultural, and "A2"-Agricultural. The intention of having two separate Agricultural designations is to keep specialty crops and highly productive land (designated in the ZBL as "A1") protected for use of agriculture. As a result, livestock operations are not allowed to locate on lands designated "A1."

The township of Wellesley (Simcoe County) has a special provision for "Rural Mixed-Use Cluster." In Wellesley's OP, it specifies that MDS "does not apply between lots within a Cluster" but that it does apply "between agricultural facilities external to the cluster" (Township of Wellesley, 2006, s. 3.7.5). It states that:

> "lots within clusters shall be considered as agricultural uses in the calculation of MDS II, for the future construction or expansion of agricultural facilities external to the Cluster" (Township of Wellesley, 2006, s. 3.7.5).

In the Township of Tiny (Simcoe County), there is a sp

> "an area of land on which a barn, stable or animal shelter may be erected to house no more than two horses and/or a limited number of domestic animals kept for recreational purposes for personal consumption by the occupant(s) of a dwelling unit on the same lot" (Township of Tiny, 2006, s. 3).

While the provisions in the definition of the hobby farm do not characterize the scaled, commercial mixed-use farm, the special definition of hobby farm and its consideration for the scale of livestock demonstrates some flexibility with regards to MDS. In the case of a hobby farm, firm scaled setback requirements are requested in lieu of Minimum Distance Formulae.

2.2.4 Best Practices – International Perspective

As earlier noted, MDS is a system designed to manage the conflict between intensive livestock operations and other land uses. As the case study regions in Ontario demonstrate, the application of MDS is applied to all land uses which include livestock except for considerations given to farms characterized as "hobby farms", or farms part of "rural mixed-use clusters". In an effort to gain perspective on how conflicts between intensive livestock operations might be mitigated, an international best practice framework was analyzed.

The management of livestock operations in Norway has been successful because of a number of policies and regulations stemming from all three levels of government. Norway is also an interesting case study for comparison because it has a similar climate and geography of cultivatable land to Ontario. For the purpose of this brief comparative analysis, Norway's approach to livestock management has been categorized into 6 strategies:

Table 5: Livestock Management in Norway

Strategy	Outcome
Limiting the Scale/Intensity of Livestock Operations	In Norway, national strategies to protect farming livelihoods have placed limits on the creation of large a livestock operations. Both the size (number of animals) and the density (number of animals per hectare) have been limited. As a result in Norway, livestock operations cannot exceed 1,400 units or 2.5 units per hectare (NMAF, 2010a).
Providing Viability Incentives	In Norway, the desire to protect small-scale farming has

Strategy	Outcome
	been associated with efforts to help farmers maximize the potential of their land in all seasons. The average farm size in Norway is around 20 hectares. As part of a national strategy to help make small farming viable, other seasonal, economic and secondary uses were encouraged on farms. These uses included daycare and winter tourism (NMAF, 2010b).
Federal Management of Land Use	In Norway the Federal Lands Act sets out a national strategy for agriculture. The country's best agricultural land is preserved for the single use of agriculture. Livestock operations are encouraged in mountainous regions, where the composition of the soil is best suited for range feeding (Government of Norway, 1995).
Tradition in Mixed-Use Farming	In Norway a strong tradition in mixed-use farming, a national strategy to promote food sovereignty and food safety, along with the countrymen's strong attachment to its agrarian identity have informed the cultural protection of its farms. These trends have helped to shape what is characterized today as Multi-Functional Agriculture(NMAF, 2010b).
Taxes on Components of Livestock Operations	In Norway there are additive taxes on the components of intensive livestock facilities including a tax on manure storage facilities. While the taxes do not limit the expansion of livestock facilities, they do act generally as a disincentive(NMAF, 2010a).
Environmental Assessment Required	In Norway, the Federal Lands Act requires all new intensive rearing of pigs or poultry to spur the onset of an environmental assessment(Government of Norway, 1999),

Table 6: Livestock Management in Norway

2.2.5 Policy Recommendations

In Ontario, managing the conflict between livestock and other uses has largely been mitigated through the application of distance allowances and zoning categories which, in the case of the Township of Tiny, use the "hobby farm" designation to provide scaled setbacks, or, as in the case with the Township of Wellesley, use the concept of "Mixed-Use Cluster" to designate specific areas as exempt from the requirements of MDS. The example from Norway demonstrates the benefits of having a national program to protect small scale agriculture and limit the size of livestock operations. These strategies contribute toward the protection of small and mixed use farms, a farming typology traditionally compatible with surrounding land uses. Taking into consideration the regulatory approach in Ontario and national policies which encourage the expansion and industrialization of farms, the following steps may help

municipalities to reduce land use conflicts between livestock operations and other surrounding uses:

1) Amend the PPS (2005) to encourage municipalities to determine appropriate distances for mixed-use farming operations, where the noxious characteristics of livestock are minimized by scale.
2) Allow municipalities the right to determine the appropriate size of livestock operations.
3) Create a provincially standardized definition of “small”, “medium” and “intensive” livestock operations
4) Amend MDS formulae to accommodate mixed-use farming.
5) Allow municipalities to apply fixed setbacks for smaller livestock operations.

2.3 Minimum Farm Size

A potential barrier to on-farm innovation exists in the Minimum Farm Size regulations present in municipal land use policies in Ontario. This topic is closely related to the issues of severance and lot creation. While regions and municipalities are in charge of determining their own minimum farm parcel sizes, the general rule of thumb put forth by the Province of Ontario is that new farm parcels must remain large enough to provide farmers with the necessary flexibility to pursue future agriculture activities and operations. This has meant that agricultural landowners are restricted in how they can sever their land to create new lots. In the GGH, 40 hectares (100 acres) is the most consistent minimum farm size, at least according to OP policies and local ZBLs.

This policy regulation could serve as a potential barrier to new and/or small farms in the region, who wish to pursue farming activities on parcel sizes less than 40 hectares. The following section will suggest policy recommendations intended to make policy more sensitive to the needs of small to medium sized farmers and allow for a greater degree of flexibility in regard to on-farm innovation.

2.3.1 History of Minimum Farm Parcel Size

While the individual rationale for the implementation of minimum farm size thresholds continues to vary from one municipality to the next, minimum farm size is believed to have originated in the United States as a tool to prevent the convergence and fragmentation of prime agricultural lands into other non-agricultural related uses (Pease, 1991, p. 337). Since agricultural lands are seen as vital to ensuring the sustainability of local residents in a particular region or country, policies which attempt to protect and preserve them are integral to the planning process.

In the United States, one of the first minimum farm size thresholds to be introduced was the 'quarter/quarter' approach. Under this metric a farmer was entitled to a single-dwelling unit for every 16 hectares (40 acres) he/she owns (Pease, 1991, p. 338). They could also divide up their land into individual 16 hectare parcels. However, it is important to note that the quarter/quarter approach "reflects the prevailing economics of rural subdivision and to a lesser extent the economics of farming" (Pease, 1991, p. 338). In other words, while 16 hectares may be an appropriate farm size to accommodate a residential dwelling, it may not be as suitable for certain agricultural activities such as large scale dairy operations (Pease, 1991, p. 338).

Another common minimum farm size formula is the "sliding scale" technique, whereby farms are designated a certain amount of building rights according to their individual size and scale (Pease, 1991, p. 338). Generally, those farms which are smaller would receive more building rights than those farms which are larger, since smaller existing farm parcels are perceived as less vital to the stability of the entire agricultural sector (Pease, 1991, p. 338).

In most countries around the world, greater emphasis has been directed towards increasing rather than decreasing minimum farm size thresholds. For example, in France the Societes d'Amenagement Foncier et d'Establishment Rural (SAFER)—a not-for-profit corporation first founded in the 1960's—was established to help prevent the fragmentation of prime agricultural land (Pease, 1991, p. 338). Central to the effectiveness of SAFER is its ability to pre-emptively buy farmland on the open market and then resell it to those local farmers who will benefit most from the acquisition at a price determined through public appraisals (Pease, 1991, p. 338).

Development pressures in Ontario make it difficult to ensure that smaller agricultural land parcels, typically under 10 hectares, are not converted into non-agricultural uses. Finding a balance between development and preservation is critical.

2.3.2 Comparison of Municipalities in the GGH

The following is a summary of those selected municipalities that were determined to have flexible policies with respect to minimum farm size:

Table 7: Flexible Minimum Farm Size Policies in the GGH

Municipality/Region	Minimum Farm Size	Innovative Practice	Relevant OP Section
North Dumfries (Waterloo)	40 hectares	ZBL may be amended to create farms under 40 hectares so long as they are reviewed by the Ministry of Agriculture and Food and Rural Affairs. OP provides specific details regarding size and scale of an operation that can take place on different parcel sizes.	5.1.2
Essa (Region of Simcoe)	40 hectares	In certain cases such as extensive grazing or specialty crops, farm size may be reduced.	6.3.4
		Allows for growing of 'specialty crops.'	

Municipality/Region	Minimum Farm Size	Innovative Practice	Relevant OP Section
St. Catharines* (Niagara Region)	16.2 hectares	Emphasis on agriculture	Part D section 10
Fort Erie (Niagara Region)	20 hectares in agricultural zones 6 hectares in rural zones	Lot creation is more contextually specific. According to section 4.3 of the OP, "Lot size shall depend on local conditions, use, and special design proposals..."	7.3 8.3
Niagara-on-the-Lake (Niagara Region)	Varies	Recognizes that farm operations in Niagara-on-the-Lake are different than elsewhere. According to the OP, the municipality is willing to contract and expand farm size according to current economic climate.	N/A

Table 8: Flexible Minimum Farm Size Policies in the GGH

*Draft OP

As one may conclude, there is no shortage of diverse ranges of parcel sizes in the GGH, particularly in the Niagara Region. That being said, many of them do require amendments to OPs and ZBLs. This is not always an easy process. In many cases, it can be fairly costly to local farmers and just as equally time consuming for local planners. One alternative would be to implement a formula which calculates and determines an adequate parcel size according to a specific agricultural activity. This idea has been previously explored in Polk County, Oregon.

2.3.4 International Comparison: Polk County, Oregon

Polk County is located in the southwest district of the Willamette Valley. Like Ontario, Polk County is an extremely agriculturally rich area, supporting over 75 different types of agriculture on surrounding bottomlands, terraces and foothills (Pease, 1991, p. 341). Similar to other

predominantly rural regions in both the United States and Canada, prime agricultural lands in the county were being lost as a result of urban growth and expansion. In particular, a significant amount of new residents were applying for dwelling applications on previously zoned agricultural land which had since been severed into individual farm parcels. While the county was under the assumption that the dwellings built were being used to support related agricultural activities, they were in fact, being built by applicants who simply desired a more rural lifestyle (Pease, 1991, p. 341).

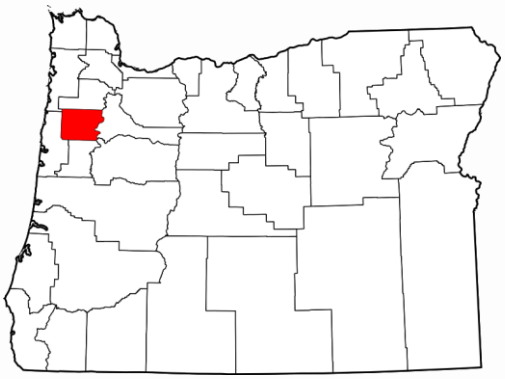

Figure 3: Map of Oregon Highlighting Polk County

Source: Wikipedia, 2006

As a result, the county was forced to examine the applications on a more 'case-by-case' basis (Pease, 1991, p. 341). However, this would soon prove to be fairly time consuming and require a large amount of resources that local planning authorities simply did not possess. In an effort to streamline the application process, a formula—based on data from the census of agriculture—was developed to help determine appropriate farm parcel sizes for specific agricultural activities (Pease, 1991, p. 342). The formula would take into consideration both economic and social factors. In short, the formula is:

GS= (S.Y.P.) i

GS stands for Gross Sales, *S* is acres for each soil type, *Y* is yield units per acre and *P* is market price per unit (Please note that this is a simplified version. For the exact formula, see Pease, 1991, p. 347). Through the formula, the county was able to recommend parcel sizes for specific agricultural uses. The following table illustrates those uses and their corresponding recommended parcel sizes for tier two municipalities in the county

Table 9: Parcel Sizes through Farm Size Formula

Commodity	Farm Parcel Size (hectares)
Cash Grains	32
Field Crops	32
Vegetables	12
Dairy	20
Berries and Grapes	8
Tree Fruit and Nuts	22
Horticulture Specialties	8
General	32
Extensive Grazing	32

Pease, 1991, p. 347

Interestingly enough, all of the recommended parcel sizes for each of the agricultural activities are less than 40 hectares. While this may be beneficial, it may also carry with it some adverse affects and consequences.

Farm Size Formula: Pros and Cons

The benefits of the formula are clear. Not only does it allow for greater flexibility in regard to the creation of farm parcel size but it also places greater emphasis on the role of agriculture as a determinant. As mentioned previously, many of the first minimum farm size thresholds developed were implemented with the intention of preventing the conversion of prime agricultural lands into residential developments. While this is also true in the case of Polk County, Oregon, the recommended parcel sizes in this case better reflect the economics of farming than previous metrics such as the quarter/quarter approach and the sliding scale technique. Furthermore, the formula also assists in streamlining the planning process, reducing both the amount of money and time required by local farmers and planners respectively.

That being said, the formula could encounter its fair share of criticism. Firstly, one has to wonder how effective the formula would be in reducing residential development. Since the formula recommends the creation of smaller farm tracts, it could be argued that it directly encourages forms of fragmentation, contradicting the initial motivation and rationale for the implementation of a minimum farm size threshold to begin with.

2.3.5 Policy Recommendations

The policy recommendation was not achieved lightly. Striking a balance between the needs of small to medium sized farms while also encouraging the preservation of farm land was challenging. The policy recommendation is as follows:

Farm parcel sizes should be flexible enough to take into consideration those agricultural operations which can be sustained on parcel sizes less than 40 hectares, while simultaneously ensuring that prime agricultural lands are preserved for agricultural related uses. Efforts to streamline the planning and review process should also be considered in an effort to be more cost and time efficient.

In the case of North Dumfries, for example, a formula may be beneficial. Although Section 5.1.2 of the OP allows for greater variances in farm size, the amendment process requires revisions by the Ministry of Food and Agriculture as well as other professionals knowledgeable in farm economics. While necessary, this could potentially serve as another barrier to on-farm innovation in the region.

2.4 Policy Language

The language found in OPs and ZBLs plays a key role in what uses are permitted and what are not permitted. In the context of farming, this has a direct impact on the ability of farmers to innovate on their farms. Policy language also determines whether rules as to what is permitted and not permitted can be interpreted loosely or strictly. The following sections will identify trends and best practices in several areas of policy language using a review of 19 OP and 22 ZBL municipal policies in the Region of Waterloo, Simcoe County and Niagara Region. National and international best practice examples will also contribute to the discussion.

2.4.1 Objectives of Land Use Policy Documents

OPs of municipalities under study were found to have varying levels of openness to agriculture in their stated objectives for agricultural areas. The OPs of West Lincoln (Niagara Region), Midland (Simcoe County), Cambridge (Simcoe County), Bradford West Gwillimbury (Simcoe County), Kitchener (Region of Waterloo) and North Dumfries (Region of Waterloo) did not have specific objectives for agricultural areas. In contrast, the municipalities of Wilmot (Region of Waterloo), Wellesley (Region of Waterloo), Waterloo (Region of Waterloo), Penetanguishene (Simcoe County), Essa (Simcoe County), Innisfil (Simcoe County), St. Catharines (Niagara Region) and Fort Erie (Niagara Region) did provide objectives for agricultural areas in their OPs. These objectives, however, mainly focused on protecting and promoting agriculture and minimizing conflicts between land uses. While such objectives do support agriculture, there were 4 municipalities that specifically included objectives in their OPs that promoted secondary uses, thus supporting the agricultural industry in agricultural areas. For example, the OP of Welland (Niagara Region) stated in its planning objectives for agricultural areas that "Where appropriate, the City will encourage agricultural activities which use green energy" (City of Welland, 2010, s. 5.1.1.3) and that:

> "The City recognizes the changing nature of the agricultural industry and supports the principle of farm diversification activities which contribute to the long term economic sustainability of the agricultural industry" (City of Welland, 2010, s. 5.1.1.4).

The other 2 municipalities which promoted diversified secondary uses in agricultural areas were Pelham (Niagara Region) and Severn (Simcoe County). Table 6 provides further detail on the relevant best practice objectives.

Table 10: Best Practices for Objectives

Municipality	Relevant OP Policies	Relevant OP Sections
Welland* (Niagara Region)	"The City recognizes the changing nature of the agricultural industry and supports the principle of farm diversification activities which contribute to the long term economic sustainability of the agricultural industry."	5.1.1.4
Pelham* (Niagara Region)	"The purpose of the Good General Agricultural designation is to protect and maintain land suitable for agricultural production and permit uses which support the agricultural industry."	B2.1.1
Severn (Simcoe County)	"To encourage the establishment of uses and activities on farm properties that highlight the importance of agriculture and its history in the Township."	A2.5.2

Policy Recommendation: It is recommended that municipalities in the GGH consider broadening their objectives for agricultural areas to recognize and encourage on-farm diversification.

2.4.2 Compatibility

Issue 1: Harmonization with PPS (2005)

Compatibility can be defined as the extent to which two uses can coexist harmoniously in close proximity. Secondary uses are defined in the PPS (2005) as:

> "uses secondary to the principal use of the property, including but not limited to, home occupations, home industries, and uses that produce value-added agricultural products from the farm operation on the property" (PPS, 2005, s. 6).

A study by Wayne Caldwell in 2006 suggested that secondary uses can be more effectively evaluated using the question of compatibility rather than limiting secondary uses explicitly, which corroborates this recommendation. Following this imperative, the PPS (2005) states that:

> "Proposed new *secondary uses* and *agriculture-related uses* shall be compatible with, and shall not hinder, surrounding agricultural operations. These uses shall be limited in scale…" (Ministry of Municipal Affairs and Housing, 2005, s. 2.3.3.1).

The following review will assess whether regional and lower-tier municipal policies in the case study regions have reflected the policy related to secondary use in the PPS (2005). It will make

recommendations based on this assessment, with the assumption that lower-tier municipalities in Ontario have an obligation to be consistent with the policies of the PPS (2005).

Regional OPs

The Region of Waterloo's OP demonstrates consistency with the PPS (2005) by stating that "(b) the secondary use will be small in scale and compatible with surrounding agricultural operations" (Region of Waterloo, 2009, s. 6.C.8).

Simcoe County's OP does not include a condition of compatibility in its policies for secondary uses. Secondary uses are defined by the Simcoe County OP as

> "uses that are small in scale and secondary to the principal use of the property, including but not limited to, home occupations, home industries, and uses that produce value-added agricultural products from the farm operation on the property" (Simcoe County, 2008, s. 5.8).

While Simcoe County's policies regarding secondary uses do address value-added uses on farms, the fact that they do not provide a condition for compatibility of secondary uses could be problematic for on-farm innovation.

Niagara Region's OP goes a step further and provides a very in-depth policy for secondary uses which the Region of Waterloo and Simcoe County can learn from. Niagara Region's policy related to secondary uses provides the condition that secondary uses should be compatible with surrounding agricultural uses while still including value-added uses. It states:

> "...uses that produce and market value-added agricultural products are permitted as secondary uses to the principal use of a property in an agricultural area provided that...(iv) new secondary uses are compatible with and do not hinder surrounding agricultural uses..." (Niagara Region, 2007, s. 6.A.18).

Lower-tier municipalities

In terms of lower-tier municipalities, 7 out of 19 municipalities stated in their OPs that secondary uses must be compatible with agriculture. The other case study OPs tended to state that on-farm businesses are permitted in agricultural areas but must be demonstrated to be secondary or minor relative to the operation. Please see Table 7 below for OP policies which harmonized with the PPS (2005)'s condition and included a condition for compatibility of secondary uses.

Table 11: Best Practices for Compatibility

Municipality	Relevant OP Policies	Relevant OP Sections
Fort Erie* (Niagara Region)	"Secondary uses shall be permitted as accessory and subordinate uses to the principle use of the property in the agricultural designation provided that… (d) new secondary uses are ***compatible*** with and do not hinder surrounding agricultural uses;"	4.5.2. IV
	"Uses which are ***compatible*** with but not necessarily related to agriculture are permitted in Rural areas and include..."	4.6.1 I.
Welland* (Niagara Region)	"Home-Based Businesses must be ***compatible*** with adjacent uses and not impact the area with traffic, noise, unusual hours of operation, etc."	5.1.3.3
West Lincoln (Niagara Region)	"… uses which may be permitted in the Agricultural designation and which shall be ***compatible*** with and subordinate to agricultural uses include:"	4.4. (a) (i)
St. Catharines* (Niagara Region)	"A full range of agriculture uses are permitted, including vineyards, livestock, field crops, fruits, vegetables, greenhouses and horticultural specialities. ***Compatible*** uses such as forestry and natural area protection and conservation may also be permitted."	14.1
Innisfil (Simcoe County)	"Within the Agricultural Policy Area uses permitted shall be limited to agricultural uses and other uses which are ***compatible*** with or supportive of the agricultural community such as small scale commercial and industrial uses servicing the agricultural community. These ***compatible*** or supportive uses shall only be permitted in the Agricultural Policy Area when it is clearly proven that these uses must be in close proximity to the agricultural community and cannot reasonably function in a nearby urbanized area."	5.1.1
Severn (Simcoe County)	"Proposed new secondary uses and agriculture-related uses shall be ***compatible*** with, and Shall not hinder, surrounding agricultural operations. These uses shall be limited in scale and criteria for these uses shall be included in municipal planning documents as recommended by the Province, or based on municipal approaches which achieve the same objective."	C5.1
Kitchener (Region of Waterloo)	"***Compatible*** land uses such as: farm-related residential dwellings; farm outbuildings; farm equipment sales, repair and service; existing recreation activities; veterinary clinics; and canine and feline boarding and grooming services, shall also be permitted."	9.1. 1

Issue 2: Levels of Compatibility

A second issue related to compatibility is that there are varying levels and perceptions of it. A report completed by Caldwell and Aston (2000) identified a range of uses often associated with the wine industry and based on a number of criteria categorized these uses into one of 3 categories- compatible, somewhat compatible and least compatible. See Table 8 for an

example). This research report concluded that those listed as compatible should be permitted as–of- right, those identified as somewhat compatible could be permitted by rezoning under appropriate OP policies, while those rated as least compatible may not be appropriate. It is to be noted that uses have been organized not only according to their scale but also the level of noise they generate and how harmoniously they can coexist together. An exercise such as the one recommended by Caldwell and Aston (2000), therefore, can ensure that compatibility as well as scale of secondary uses are addressed through municipal policy. Thus, the PPS (2005)'s policies could potentially be reflected in municipal policies through this exercise.

Table 12: Compatibility Chart

Compatible	Somewhat Compatible	Least Compatible
Tours and Tastings Wine Sales Gift Boutique Sale of Local Products Outdoor Barbecue B & B (max. 3 rooms)	Bus Tours Outdoor Events Indoor Events Small Restaurant Restaurant Fine Dining Weddings & Reception Banquet Facilities Conference Rooms B & B (max. 6 rooms) Guest Cottage Inn	Sale of Non-local Products Helicopter Tours Large Gourmet Large Overnight

Caldwell, W. and D. Aston. 2000. Planning for the Future Development of Ontario's Wine Industry. University of Guelph. http://www.waynecaldwell.ca.

Policy Recommendation: In order for agricultural policies to be consistent with the PPS (2005), municipalities should use OPs to address compatibility and/or supportiveness of a secondary use on agricultural land. Municipalities should also consider engaging in an exercise to determine the compatibility of different farming types and then develop specific policies for each of them.

2.4.3 Secondary and Value-adding Uses

Value-adding, or value-added, uses can be defined as those secondary uses which alter the original agricultural product or commodity grown on site by the farmer and may be supplemented by products from elsewhere for the purpose of gaining a marketing advantage (Township of Woolwich, 2009). Value-added uses such as distribution, packaging and processing are hindered by several provincial and municipal policies (Britten et al., 2009). A recent report by the Ontario Farmland Trust and the Metcalf Foundation (2010) also recommended the redefinition of permitted agricultural and secondary uses to include value added opportunities. Finally, the Agricultural Advisory Team of the Ministry of Agriculture, Food and Rural Affairs has stated that:

> "We heard one of the issues linked to economic viability is the opportunity for farmers to operate auxiliary businesses on their farms. We recognize the importance of value-added and value-retaining agricultural activities, provided they are secondary to the agricultural use on the farm" (OMAFRA, 2004).

It becomes clear based on the aforementioned literature that the inclusion of secondary and value-adding activities as permitted or secondary uses in municipal OP policies and ZBLs is important for on-farm innovation.

In a review of lower-municipalities in the three case study regions, 4 municipalities out of the 19 under study explicitly included value-adding activities as possible permitted or secondary uses to agricultural activities in their OPs. Only 1 municipalities out of the 19 reviewed explicitly included value-adding activities as permitted or secondary uses in its ZBL. The fact that value-adding activities are not normally explicitly included as permitted uses in OPs and ZBLs demonstrates a lack of acknowledgement of the importance of such activities.

Please see Table 9 for examples of ways in which municipalities can explicitly incorporate value-adding into their OPs and ZBLs. This is a comprehensive list of the agriculture-related policies in the reviewed municipalities' OPs and ZBLs which explicitly included value-adding as permitted or secondary uses.

Table 13: Best Practices for Making Value-Adding an Explicit Permitted/Secondary Use

Municipality	Relevant OP Policies	Relevant OP Sections
West Lincoln (Niagara Region)	"Uses permitted in Agricultural Designation include… uses that produce ***value-added*** agricultural products from the farm operations on the property"	4.4 (a)
St. Catharines* (Niagara Region)	"Permitted secondary uses, provided they are incidental and subordinate to the main agriculture operation, may include wineries, agri-tourism and market ***value added*** uses, seasonal local grown produce retail outlets, home occupations and home industries."	14.1
Severn (Simcoe County)	"The principal use of land in the Agricultural designation shall be agriculture. Permitted accessory uses include:… home occupations and home industries subject to the policies of this Plan and uses that produce ***value-added*** agricultural products from the farm operation on the farm"	C5.3
Welland* (Niagara Region)	"Secondary uses are secondary to the principal use of the property, including but not limited to, home occupations, home industries, and uses that produce ***value-added*** agricultural products from the farm operation on the property."	5.1.2.2

Municipality	Relevant ZBL Excerpts	Relevant ZBL sections
Woolwich (Region of Waterloo)	"[Permitted uses include] ***value Added*** Farm Uses"	7.3.1

Policy Recommendation: It is recommended that in order to encourage on-farm diversification, innovation and viability, municipalities in the GGH should explicitly incorporate value-added uses as permitted or secondary uses in their policies.

2.4.4 Definitions

Terms such as "small-scale", "minor" and "farm" are often used in OPs and ZBLs. They have an impact on the types of uses that are allowed in agricultural areas, but are not usually defined in municipal OPs or ZBLs. For instance, the term "small-scale" is often referred to in OPs and ZBLs to specify that secondary uses must be "small-scale" commercial and industrial uses servicing the agricultural community. However, this term was only defined in 1 of the 18 municipalities studied and some municipalities have requested clarification concerning the definition of "small scale" (Ontario Farmland Trust and Metcalf Foundation, 2010). The lack of definition of such terms could be problematic because it could cause unnecessary time and effort spent on the part of farmers in gaining approval for uses which could increase on-farm viability. This problem is demonstrated by several Ontario Municipal Board cases concerning disagreement between planners as to the scale of proposed uses on a farm. In each of these cases, professional planning opinion on what constitutes a small-scale use had an impact on whether or not these proposed uses were permitted on the farm (OMB, 2009a; OMB, 2009b).

Small-scale

None of the municipalities under review explicitly defined "small-scale". However, the Town of Caledon (Peel) has provided a definition which allows for much interpretation and flexibility:

> "The concept of "small scale" is specific to context and not interchangeable from one context to another" (Town of Caledon, 2009, s. 5.1.1.5.2).

This definition may be problematic as it is not very specific and could result in conflict over its interpretation. However, this example clearly indicates the importance of context when considering small scale and secondary uses. This is an example that may be built and improved upon by municipalities when considering appropriate definitions for the term 'small scale'.

Minor

The term "minor" was only defined in the policies of one of the municipalities under study. Essa County (Simcoe) defined the term in its OP as:

> "For the purposes of this Section, the term "minor" shall be generally defined as a use having low traffic generation, no nuisance effects on surrounding uses, a scale consistent with existing uses, and no negative environmental impact there shall be recognition of the cumulative impacts of these non-agricultural uses to the surroundings" (Township of Essa, 2001, s. 7.3.5).

While also an example that can be used and improved upon by municipalities, this example focuses more on mitigating the scale and negative impacts of farming than on compatibility of uses on agricultural areas.

Farm

7 out of 22 ZBLs under study defined "farm" or "farming", but few included value-adding uses as part of these definitions. The following are examples of two definitions that are very different. Fort Erie (Niagara) excludes value-adding uses in its definition, while the Pelham (Niagara) definition includes value adding. On the negative side, the Pelham (Niagara) definition includes very specific uses when defining farming. This may have the unintended effect of excluding other farming uses.

Aa

Definitions of farm:

1. ""FARM" means land used for agricultural uses and includes a farm dwelling and

   accessory building, where such accessory buildings may include accommodation for full time or seasonal farm workers" (Fort Erie, 2006, s. 5.86).

2. **""**FARM**"** means a lot, with or without accessory buildings or structures, which is

   used for:
   (i) the tillage of soil;
   (ii) the growing of vegetables, fruits, grains or flowers including, but not necessarily limited to lettuce, carrots, tomatoes, mushrooms, beans, melons, and potatoes;
   (iii) woodlots;
   (iv) the raising of livestock including, but not so as to limit the generality of the foregoing, cattle, swine, sheep, goats, poultry, horses, ponies, donkeys, mules, mink, ducks, rabbits;
   (v) dairying;
   (vi) beekeeping;
   (vii) greenhouses; or
   (viii) the sale of farm products produced on the farm" (Town of Pelham, 1987, s. 5.61).

Policy Recommendation: Municipalities should define OP and ZBL terms in a manner that is clear and not overly restrictive. A balance is required in order to allow for some flexibility while also maintaining the objective of the OP policies and ZBLs.

3.0 Summary of Recommendations

The purpose of the policy recommendations in each section was to highlight the possibility for change. An overarching theme prevalent in most—if not all—of the recommendations was the idea that 'context' is increasingly important in order to remain flexible. In the case of MDS for example, one of the recommendations is to allow municipalities themselves to determine the size of their own livestock operations. Similarly, in regard to minimum farm size, the current 40 hectare threshold is too generic and does not take into consideration those agricultural uses which can be sustained on parcel sizes less than that.

3.1 Land Use Policy Recommendations

The following chart provides a breakdown of the policy recommendations for each section. They are as follows:

Priority Issue	Recommendation(s)
Agricultural Zoning	Municipalities should strive to strike a balance between specific and general agricultural uses when writing ZBLs to promote on-farm innovation and viability. Municipalities should update outdated ZBLs so they are more reflective of the agricultural industry today, making them more conducive for on-farm innovation and viability. Planners should consider other land use regulation frameworks, such as performance based zoning, as an alternative to the Euclidean zoning framework.
Minimum Distance Separation (MDS)	Amend the PPS (2005) to encourage municipalities to determine appropriate distances for mixed-use farming operations, where the noxious characteristics of livestock are minimized by scale. Allow municipalities the right to determine the appropriate size of livestock operations. Create a provincially standardized definition of "small", "medium" and "intensive" livestock operations Amend MDS formulae to accommodate mixed-use farming. Allow municipalities to apply fixed setbacks for smaller livestock operations.

Priority Issue	Recommendation(s)
Minimum Farm Size	Farm parcel sizes should be flexible enough to take into consideration those agricultural operations which can be sustained on parcel sizes less than 40 hectares, while simultaneously ensuring that prime agricultural lands are preserved for agricultural related uses. Efforts to streamline the planning and review process should also be considered in an effort to be more cost and time efficient.
Policy Language	In order for agricultural policies to be consistent with the PPS (2005), municipalities should use OPs to address compatibility and/or supportiveness of a secondary use on agricultural land. Municipalities should also consider engaging in an exercise to determine the compatibility of different farming types and then develop specific policies for each of them. It is recommended that in order to encourage on-farm diversification, innovation and viability, municipalities in the GGH should explicitly incorporate value-added uses as permitted or secondary uses in their policies**.** Municipalities should define OP and ZBL terms in a manner that is clear and not overly restrictive. A balance is required in order to allow for some flexibility while also maintaining the objective of the OP policies and ZBLs.

Striking a balance between writing polices which are rigid enough to ensure prime agricultural lands are used appropriately while simultaneously remaining flexible enough to allow for on-farm innovation was challenging. It is imperative that policy makers developing agricultural policies remain aware of this struggle and embrace it as a part of the complexity surrounding the issue.

3.2 Recommendations for Policy-Makers:

The following are some recommendations for policy makers. Their role in the development of agricultural policy should not be understated.

1. **Engage with local farmers in your municipality to understand those land use planning issues which affect them regularly.** Investigating and exploring which land use planning issues affect farmers on a daily basis will help capture a better sense as to what polices should be changed. It will also help to educate farmers as to whether or not those changes can be accommodated in the current planning framework. Public meetings and forums on agricultural related issues between policy-makers, planners, farmers, the general public, and other important stakeholders should all be encouraged. Fruitful discussion and dialogue regarding the issues at hand will assist in educating all parties involved.

2. **Draft policies and zoning by-laws which cater to the individual agricultural needs of your region and/or municipality**. Although the PPS and Planning Act may sometimes appear overly rigid, requiring municipalities to remain 'consistent' with those polices of related provincial interest, there is room for flexibility. Simply conforming for the sake of it, without investigating the potential for change, may limit a municipality's chance to allow its farmers to innovate. That being said, recognizing that many of the policies put forth by the province are there for good reason is also fundamental. While the guide does provide some historical context, a greater and more in depth exploration into the origins of existing polices will provide more credibility to those new policies which advocate for change.

3.3 Recommendations for Sustain Ontario

The following recommendations are for Sustain Ontario, to further strengthen their role in this process. They are:

1. Encourage the Province (Ministry of Agriculture Food, and Rural Affairs) to provide municipalities with more guidance with respect to interpreting the PPS (2005) to encourage and promote farm innovation and viability in Ontario. Examples of potential sources of guidance are new PPS policies and/or a guide to accompany PPS policies.
2. Inform municipalities (planners and decision makers) about the importance of farming and food security. OP policies and ZBLs need to be more farming "friendly" to encourage and promote farm innovation and viability
3. Inform municipalities (planners and decision makers) about the ways in which their municipal OP policies and ZBLs hinder and promote farm innovation and viability. In doing so, refer to recommendations for municipalities provided in this guide.

Conclusion:

As in most regions, issues related to agriculture in the GGH are complex. There is no simple solution to any of the 4 priority issues listed above. However, there is always room for improvement. The purpose of the guide was to create awareness of these issues and recommend potential remedies while working within the existing planning framework. While large scale changes to the current planning system may be necessary, change is a very much an incremental and gradual process. Recognizing that this process takes time and will not happen overnight is fundamental to ensuring that the necessary changes are in fact made.

Appendix A: Agriculture in Ontario

At present, the agricultural industry in Ontario is wrought with financial risk and uncertainty due to corporate food downsizing and rationalizations, as well as an exodus of private capital from the province, eliminating jobs and further emphasizing large-scale food production for export rather than domestic consumption (Donald, 2009). In order to make the industry more profitable for current farmers and more appealing for prospective farmers, it is key that farmers can expect a fair and reasonable return from their products (Walton, 2003, p.19). However, Ontario farmers are not receiving enough of a return for their agricultural product. For example, in 2004, 62% of farm families had more income coming from outside the farm than from it (Galant & Wekerle, 2009). Of those 62% farm operators, statistics from the Ontario Ministry of Agriculture, Food and Rural Affairs note that they receive approximately three quarters of their household income from off-farm sources (Province of Ontario, 2009a). This indicates that farmers on farms with operating revenues of more than $10,000 per year are often unable to rely on farming for their livelihoods.

Wally Seccombe's paper, "A Home-Grown Strategy for Ontario Agriculture", published by the Toronto Food Policy Council in 2007, notes that smaller farms (those grossing incomes of less than $100,000 per year) make up roughly 50% of total farms in Ontario (Sparling & Laughland in Seccombe, 2007). He also notes that from 1999 to 2004, smaller farms have lost money.

In Ontario between 1996 and 2006, the number of farms smaller than 560 acres (large size farms) increased by 25% (Statistics Canada, 1996 and 2006). During the same time period, the number of farms smaller than 560 acres (mid size farms), which represent the vast majority of farms in the province, decreased by almost 18%. However, the number of the smallest farms, those under 70 acres (small size farms), has been on the rise since 2001. This represents an increase of more than 1,000 farms, or almost 10% (OMAFRA, 2008).

Appendix B: Agriculture in Case Study Regions

The GGH, located in southern Ontario, is situated on much of Canada's prime agricultural land. Prime agricultural land is defined as exemplary soil condition conducive to agriculture. Furthermore, more than half of Canada's very best agricultural land, Class 1 agriculture, is found in southern Ontario (Watkins, Hilts & Brockie, 2003). Approximately 18% of this Class 1 agricultural land has already been urbanized and removed from food production and approximately another 22% of this land is facing constant urban development pressure (Petrie et al., 2008).

Significant policy measures have been put into place to protect agricultural land in the GGH. The most significant of these is the Greenbelt Act. The Greenbelt Act protects approximately 1.8 million acres land across southern Ontario, stretching from south of Peterborough, across the north of Toronto to Lake Simcoe, north on the Niagara Escarpment to Tobermory at the top

of Bruce Peninsula and around Hamilton to Niagara Falls. This Greenbelt area has become vital to the quality of life of Ontarians with strong environmental leadership with respect to green space, vibrant communities, wetlands, forests, watershed and leading farmland inventories. The following is a brief description of some of the key agricultural characteristics of our 3 case study areas; Waterloo Region, Simcoe County and Niagara Region.

Waterloo Region

The Region of Waterloo is located in southwest Ontario, located just outside the Greenbelt Plan area. The Region is comprised of 3 urban municipalities (Kitchener, Waterloo and Cambridge) and 4 rural townships (North Dumfries, Wilmot, Wellesley and Woolwich). The Region of Waterloo is one of the fastest growing areas within the Province of Ontario.

The Region has approximately 1,444 farms in total which translates into approximately 91,614.4 hectares of total farm land. This accounts for approximately 1.7% of the total farm area in Ontario. In addition, the Region has an agricultural sector with total gross farm receipts of $313.9 million and approximately 9,200 people employed in the agricultural sector (Statistics Canada, 2006). When comparing the Statistics Canada data for 2001 and 2006, the Region experienced a 0.02% decrease in the agricultural employment rate, yet a 0.3% increase in the total area of census farms and a 33.74% increase in total farm capital value (Statistics Canada, 2001 and 2006). In addition to such impressive growth in the Regional farming industry, over 80% of the census farms in the Region demonstrate a medium to high capital value ($500,000 and over) with the majority of the farms in the Region engaging in a relatively high volume of sales (Statistics Canada, 2006). The top three agricultural farm sectors are cattle, dairy and grain.

Simcoe County

Simcoe County is located in central southern Ontario and is within the northern portion of the Greenbelt Plan area. The County is comprised of 16 municipalities; Adjala-Tosorontio, Bradford West Gwillimbury, Clearview, Collingwood, Essa, Innisfil, New Tecumseth, Midland, Oro-Medonte, Penetanguishene, Ramara, Severn, Springwater, Tay, Tiny and Wasaga Beach.

Simcoe County is home to one of the Specialty Crop Areas in Ontario, the Holland Marsh. The Holland Marsh area has highly fertile muck soil and it is known as the vegetable capital of Canada. In 2006, the County was home to approximately 2,402 farms in total which translates into approximately 216,002.2 hectares of total farm land (Statistics Canada, 2006). This accounts for approximately 4.2% of the total farm area in Ontario (Statistics Canada, 2006). Agriculture is the predominate land use activity in the County with total gross farm receipts of $269.7 million and employing over 9,800 people in the agricultural sector (Statistics Canada, 2006). When comparing the Statistics Canada data for 2001 and 2006, the County experienced a 1.3% drop in total area for census farms and a 0.36% decrease in the agricultural employment rate. However, the County did experience a 60% increase in total farm capital in 2006 (Statistics Canada, 2006). The top farming sectors in the County are cattle, diary, grain and

nursery farming. It is also interesting to note that Simcoe County predominately contains small and medium sized farms in terms of the size of the operation and the value of sales.

Niagara Region

Niagara Region is located in southern Ontario and forms the southern portion of the Greenbelt Plan. The Region is comprised of 12 municipalities; Fort Erie, Grimsby, Lincoln, Niagara Falls, Niagara-on-the-Lake, Pelham, Port Colborne, St. Catharines, Thorold, Wainfleet, Welland and West Lincoln. Niagara Region is well known for its agriculture and tourism industries because of its unique natural landscape. The region is home to another specialty crop area in Ontario, the Niagara Peninsula Tender Fruit and Grape Area. Tender Fruit production and estate wine industries are recognized as major economic drivers for the Region.

Niagara Region has approximately 2,236 farms in total which translates into approximately 93,777 hectares of total farm land in the Region (Statistics Canada, 2006). The farmland in Niagara Region represents approximately 1.7% of total farm land in Ontario (Statistics Canada, 2006). In 2006, Niagara Region had a total farm receipt of $562.7 million and over 16,400 people were employed in the agricultural sector (Statistics Canada, 2006). When comparing the Statistics Canada date from 2001 to 2006, the Region experienced a 0.5% decrease in total area of census farms, a 0.45% decrease in agricultural employment rate and a 0.37% increase in total farm capital value. The farming sector in Niagara Region is largely focused on nursery, fruit and tree-nut farming. Niagara Region is also home to a large number of small scale farms.

Appendix C: Food Security and Food Equity Concerns

[Retrieved from Britten et al., 2009]

Food security, or food equity as it has come to be known, “stresses equitable access to food for all people, regardless of income or location” (Metcalf Foundation, 2008, p. 33). Expressed in such documents as Canada’s Action Plan for Food Security (1998), food security exists when all people have both economic and physical access to safe and nutritious food at all times that meet their dietary needs for an active and healthy life. Many municipalities, including the City of Toronto in its Council-passed Food Charter, have made it a commitment to pursue the goal of being a food secure community for its residents by institutionalizing (through civic policy) its concepts and to give advocates a policy basis on which to stand up for food rights (Donald, 2009, p. 25).

At this local level, community food security represents an ideal. However, food secure communities are difficult to achieve. Income inequities and the erosion of the welfare state serve as barriers to many people acquiring healthy food. As a result, this is leading to unhealthy eating patterns (including fast food and convenience stores as primary sources of food) as well increased visits to food banks. Municipal planning processes may adversely affect access to healthy food through zoning regulations (Wegener, 2009), leading to food deserts – the gaps in the urban or rural fabric where quality food is nowhere near to be found (Lister, 2007). Smoyer-

Tomic, Spence and Amrhein (2006) found that zoning and planning emphasize optimal locations for supermarkets rather than for populations in need (p. 322) while Pothukuchi (2004) observes that planning decisions, such as advising against locating a food pantry in a mixed-income neighbourhood for fear of who it may attract, have negative impacts on food security.

However, market forces play a much larger role for the existence of food deserts. Supermarkets or other food stores often pull out of, or do not locate in, neighbourhoods when they determine it is no longer economically profitable to do so, creating these gaps in food provision. Bedore (2007) observes this in Kingston, Ontario where a low-income neighbourhood's only full-service grocery store announced its intention to close due for economic reasons. Furey, Strugnell and McIlveen (2001) notes that as the supermarket industry becomes increasingly consolidated, the trend has been to move toward fewer and larger stores, leading to the closure of a chain's smaller outlets that cannot compete on the basis of price and availability.

However, while the community food security movement is most visible at the consumption end, especially in urban areas, distribution networks and geography affect access to food in rural areas as well, where cash crops and monocultures controlled by large corporate farms dominate the landscape, leaving little room for fresh fruit or vegetable production (Hinrichs, 2003). Community food security, then, is a reaction to the loss of control and homogenization of food – the standardization and uniformity of food products (Metcalf Foundation, 2008) grown or produced for their reliable taste and appearance – that has resulted from the large scale industrialization of agriculture. It aims to bring back local decision-making and improve long-term access to locally grown food (Allen, 1999), as well as an economic purpose—in rural communities, as in larger urban centres, little money spent on food actually stays within local economies (Hultine et al., 2007). In this sense, community food security projects must address local consumptive inequities – "scaling out" – while also devoting considerable attention to "scaling up", that is addressing structural concerns further along the food chain such as the types of agriculture and its local (or global) focus (Johnston and Baker, 2005). This new approach "seeks to re-link production and consumption with the goal of ensuring both an adequate and accessible food supply in both the present and the future" (Allen, 1999, p. 117). A healthy and sustainable agricultural system for food security, proper education and government regulations to inform the consumer of the benefits that local and regional food systems can have on their overall health are all needed for food security. A region focused on securing its food production in order to secure the consumption patterns of its residents, then, needs a strong local agricultural sector committed to supplying the local market.

Appendix D: The Case for Small and Medium Scale Farms

[Retrieved from Britten et al., 2009]

Within the agricultural industry there has been a dramatic shift from being supply-driven to being largely demand-driven (Charlebois, 2008). In factory farms – the large-scale, usually monoculture farms that supply many of the cash crops as well as meat and dairy – dominate

the landscape, selling large quantities of relatively-cheaply produced foodstuffs to producers and grocery chains which pass along savings to the consumer in this manner (Smithers & Johnson, 2004).

Although in Ontario, the trend has been a shift towards fewer and much larger farms, many smaller-scale farmers have been unable, or unwilling, to industrialize to that extent (Gray, 2005, p. 23). Thus, the abundance of imported mass produced foods today have exerted negative externalities on farming communities and have made it increasingly difficult for small and medium sized farmers to remain economically viable. Often this has meant that farmers have found sustaining agricultural livelihoods difficult. While few are advocating for a complete cessation of international food transactions, there is a growing need to focus on improving the economic viability of small and medium scale farms (Britten et al., 2009). Through new, innovative farm practices that improve farm viability, the small and medium farming industry can meet the needs of the current and future market and reach a higher level of economic viability.

Appendix E: Comparison Matrix

(See Attached Disk)

References

Policy Documents

BLS Planning Associates. (1998). *Official Plan of the Township of West Lincoln.* Retrieved from http://www.westlincoln.ca/TWL_Official_Plan.php.

City of Cambridge. (2004, January). *Official Plan.* Retrieved from http://www.cambridge.ca/relatedDocs/2004%20OP%20Consolidation%20incl%20fig%20&%20maps.pdf.

City of Cambridge. (2008, March). *Zoning Bylaw.* Retrieved from http://www.cambridge.ca/relatedDocs/ZoningBylaw.pdf.

City of Kitchener. (1995). *Official/Municipal Plan*. Retrieved from http://www.kitchener.ca/municipal_plan/mpmain.aspx.

City of St. Catharines. (2010). *Draft New Official Plan*. Retrieved from http://stcatharines.ca/cityservices/citydepartments/planning/draft_OP.asp.

City of Welland. (2010). *Zoning By-law Number 2667, As Amended*. Retrieved from http://www.city.welland.on.ca/ByLaws/ZoningBylaw2667.asp.

City of Welland. (2010). *Draft Official Plan*. Retrieved from http://www.welland.ca/Development/OPA.asp.

Ministry of Municipal Affairs and Housing. (2005). *Provincial Policy Statement*. Retrieved from http://www.mah.gov.on.ca/Page1485.aspx.

Niagara Region. (2007). *Official Plan*. Retrieved from http://www.niagararegion.ca/living/icp/pdf/Vol-1_RPP_2007_web.pdf.

Region of Waterloo. (2009). *Official Plan*. Retrieved from http://www.region.waterloo.on.ca/web/region.nsf/DocID/CA5BC18540AE6A2185257555006D0304?OpenDocument.

Reinders Southpark and Associates Ltd. (2004, October). *Town of Midland.* Retrieved from http://www.midland.ca/ws_par/groups/public/@pub/@midland/documents/web_content/wspar_016109.pdf.

Simcoe County. (2008). *Proposed Official Plan of the County of Simcoe*. Retrieved from http://www.county.simcoe.on.ca/ws_cos/groups/public/@pub/@cos/@corps/@plan/documents/web_content/wscos_003107.pdf.

Town of Caledon. (2009). *Official Plan Amendment No. 179*. Retrieved from http://www.caledon.ca/contentc/townhall/departments/planningdevelopment/OPA179-Appendix1_to_pr2003-65_as_amended.pdf.

Town of Fort Erie. (2006, September 11). *New Town Official Plan.* Retrieved from http://www.town.forterie.ca/WebSite/tofeweb.nsf/Doc/OpenDoc.html?OpenFrameset&ID=14656704E90FD0388525767A006A2DE6&File=Official%20Plan.pdf&Title=PJR%20Schedules%20-%20New%20Town%20Official%20Plan.

Town of Fort Erie. (2006). *Town of Fort Erie Comprehensive Zoning By-law 129-90*. Retrieved from http://www.town.forterie.ca/WebSite/tofeweb.nsf/0/4B55CDB48D07E1A6852574C100517FF3?OpenDocument.

Town of Fort Erie. (2008, June 30). *Zoning Bylaw.* Retrieved from http://www.town.forterie.ca/WebSite/tofeweb.nsf/0/2C7CEA3D7073256085256FDA00637888?OpenDocument.

Town of Innisfil. (2002). *Official Plan*. Retrieved from http://www.town.innisfil.on.ca/Business/text/innisfil_official_plan.pdf.

Town of Midland. (2004, November). *Zoning Bylaw.* Retrieved from http://www.midland.ca/ws_par/groups/public/@pub/@midland/documents/web_content/wspar_021835.pdf.

Town of Pelham. (1987). *Office Consolidation: Town of Pelham Zoning By-law No. 1136 (1987), as amended*. Retrieved from http://www.pelham.ca/Departments/PlanningDevelopment/ZoningBylaw/tabid/259/Default.aspx.

Town of Pelham. (2007). *Official Plan of the Town of Pelham*. Retrieved from http://www.pelham.ca/LinkClick.aspx?fileticket=jEvMhvsrXkY%3d&tabid=258.

Township of Essa. (2001). *Official Plan of the Township of Essa*. Retrieved from http://calendar.simcoe.ca/partners/essa/articles/Miscellaneous/OP.pdf.

Township of North Dumfries. (2008). *Official Plan of the Township of North Dumfries.* Retrieved from http://www.ksmart.on.ca/Planning/Official%20Plan/ND%20OP%20Complete%20Text.pdf

Township of Severn. (2005). *Severn Township Official Plan*. Retrieved from http://www.townshipofsevern.com/officialplan.asp.

Township of Woolwich. (2009). *Zoning By-Law Number 55-86*. Retrieved from http://www.woolwich.ca/en/townshipservices/resources/Index2009.pdf.

Other Documents

Britten, H., Chen, A., Hilburt, J. Kaur, S., Krecklo, J. and Weigeldt, N. (2009). *Food and Farm Innovation Studio, Final Report*. Presented to Lauren Baker, Sustain Ontario in fulfillment of the PL 8109 Planning Studio, School of Regional Planning, Ryerson University.

Brunet, N., Caldwell, W. and Hilts, S. (2007). "Farmland preservation and farm level adaption: approaches to preserving and promoting agricultural activities in the peri-urban space" in eds. W. Caldwell, S. Hilts and B. Wilton, *Farmland Preservation: Land for Future Generations*. Guelph, ON: Centre for Land and Water Stewardship.

Caldwell, W. and D. Aston. (2000). *Planning for the Future Development of Ontario's Wine Industry.* Retrieved from http://www.waynecaldwell.ca.

Canada Agriculture and Agri-Food. (1998). *Canada's Action Plan for Food Security: In Response to the World Food Summit of Action*. Retrieved from http://www.agr.gc.ca/index_e.php?s1=misb&s2=fsec-seca&page=action.

Charlebois, S. (2008). The gateway to a Canadian market-driven agricultural economy: A framework for demand chain management in the food industry. *British Food Journal 110* (9), 882-897.

Copus, A. (2006). *Continuity or Transformation? Perspectives on Rural Development in Nordic Countries*. Presented as part of proceedings of 2 day Workshop hosted by Nordregio, Stockhom, October 10th, and 11th, 2006. Retrieved from http://www.norden.org/en.

Donald, B. (2009). *From Kraft to Craft: innovation and creativity in Ontario's Food Economy (Working paper published by the Martin Prosperity Institute.* Rotman School of Management, University of Toronto, February 2009, ref. 2009-WPONT-001). Retrieved from http://martinprosperity.org/research-and-publications

Environment Strategy 2008-2015. (2008). *Report on the direction of National Agriculture in Norway.* National Ministry of Agriculture and Food. Retrieved from http://www.regjeringen.no/upload/LMD/Vedlegg/Brosjyrer_veiledere_rapporter/Miljostrategi_2008_2015_M_0739_B_engelsk.pdf.

Galant, E., & Wekerle, G.R. (2009). Farm subdivisions: Preserving farmland and/or exurban amenity spaces? *Plan* 49, 2, 31-34

Gray, T. W. (2005). Local-based, alternative-marketing strategy could help save more small farms. *Rural Cooperatives,* May/June, 20-23.

Government of Norway. (1999) Regulations relating to Environmental Impact Assessment. Retrieved from; http://www.regjeringen.no/en/archive/Bondeviks-1st-Government/md/Lover-og-regler/1999/t-1306_environmental_impact_assessment.html?id=260622

Government of Norway. (1995). *The Land Act.* Retrieved from http://www.regjeringen.no/en/doc/Laws/Acts/The-Land-Act.html?id=269774

Government of Norway. (2009) *Animal Welfare Act.* Retrieved from http://www.regjeringen.no/en/dep/lmd/Documents/Acts-and-regulations/Acts.html?id=663

Jervell, A.M. Jolly, D. (2003). Beyond food. Towards a multifunctional agriculture. Working Paper. SeMM Center for Food Policy. Norwegian Agricultural Economics Research Institute.

Lister, N.-M. (2007). Placing Food: Toronto's Edible Landscape. In ed. J. Knechtel, *FOOD*. (pp. 148-185). Cambridge, MA: MIT Press.

Wikipedia. (2006). *Map of Oregon Highlighting Polk County.* Retrieved from http://images.google.ca/imgres?imgurl=http://upload.wikimedia.org/wikipedia/commons/thumb/b/b2/Map_of_Oregon_highlighting_Polk_County.svg/800px.

Metcalf Foundation. (2008). *Food Connects Us All: Sustainable Local Food in Southern Ontario.* Retrieved from http://www.metcalffoundation.com/downloads/Food%20Connects%20Us%20All.pdf.

Ministry of Municipal Affairs and Housing. (2008). *The Citizens' Guide to Land Use Planning*. Retrieved from http://www.mah.gov.on.ca/Page338.aspx.

Norwegian Ministry of Agriculture and Food (NMAF). (2010a). *Specific guidelines regarding the Animal Welfare Act.* Retrieved from http://www.regjeringen.no/en/dep/lmd/whats-new/news/2009/mai-09/new-animal-welfare-act-/specific-guidelines-regarding-the-animal.html?id=562555&epslanguage=en-GB

Norwegian Ministry of Agriculture and Food (NMAF). (2010b). *Norwegian agriculture, guidelines and brochures.* Retrieved from http://www.regjeringen.no/en/archive/Bondeviks-1st-Government/ministry-of-agriculture/Veiledninger-og-brosjyrer/2000/norwegian_agriculture.html?id=232062

Ontario Farmland Trust and Metcalf Foundation. (2010). *Planning Regional Food Systems: A guide for municipal planning and development in the Greater Golden Horseshoe.* Retrieved from http://www.ontariofarmlandtrust.ca/places-to-grow-food/for-planners.

Ontario Municipal Board (OMB). (2009a). *Decision PL090261*. Retrieved from http://www.omb.gov.on.ca/e-decisions/pl090261-Sep-22-2009.pdf.

Ontario Municipal Board (OMB). (2009b). *Decision PL081364*. Retrieved from http://www.omb.gov.on.ca/e-decisions/pl081364-Apr-23-2009.pdf.

Pease, James (1991). Farm Size and Land Use Policy: An Oregon Case Study. *Environmental Management* 15, (3), 337-348.

Prairie Swine Center. (n.d.) *Legislation and Regulation*. *A review of regulations and ordinates concerning regulating agriculture.* Retrieved from www.prairieswine.com/database/pdf/1235.

Province of Ontario. Ministry of Agriculture Food & Rural Affairs. (OMAFRA). (2004). *Agricultural Advisory Team Advice to the Government of Ontario.* Retrieved from http://www.omafra.gov. on.ca/english/aat/advice.htm.

Province of Ontario. Ministry of Agriculture, Food and Rural Affairs (OMAFRA). (2008). Number of Ontario Census Farms Classified by Total Farm Area, 1996, 2001, 2006 (Tables). Retrieved from http://www.omafra.gov.on.ca/english/stats/census/size2.htm.

Province of Ontario. Ministry of Agriculture, Food & Rural Affairs (OMAFRA). (2009a). Farm Operators' Income from Farm and Off-Farm Sources, by Region, 2007. Retrieved from http:// www.omafra.gov.on.ca/english/stats/finance/reginc07.htm.

Province of Ontario. Ministry of Agriculture, Food & Rural Affairs (OMAFRA). (2009b). A Guide to Lot Creation in Prime Agricultural Areas. Retrieved from http://www.omafra.gov.on.ca/english/landuse/facts/lot_draft.htm#7.

Province of Ontario. Ministry of Agriculture, Food & Rural Affairs (OMAFRA). (2009c). Minimum Distance Separation Formula. Retrieved from http://www.omafra.gov.on.ca/english/landuse/mds.htm.

Seccombe, W. (2007). *A Home Grown Strategy for Ontario Agriculture: A new deal for farmers, a new relationship with consumers*. Draft paper published by the Toronto Food Policy council, September 2007. Retrieved from http://www.ryerson.ca/foodsecurity/resources/.

Smithers, J., Johnson, P., and Joseph A. (2004). The dynamics of family farming in North Huron County, Ontario. Part II. Farm-community interactions. *Canadian Geographer 48* (2), 209-224.

Statistics Canada (2001). 2001 Census of Agriculture – Canadian Farms in the 21st Century. Retrieved from http://www.statcan.gc.ca/daily-quotidien/020515/dq020515a-eng.htm

Statistics Canada (2006). Census of Agriculture. Farm Operations and Operators. Retrieved from http://www.statcan.gc.ca/daily-quotidien/070516/dq070516a-eng.htm

Walton, M. (2003). *Agriculture in the Central Ontario Zone*. Smart Growth Issue Paper, Number 1, published by Neptis Foundation. Retrieved from http://www.neptis.org/library/show.cfm?id=72&cat_id=6.

Watkins, M., Hilts, S. & Brockie, E. (2003). Protecting Southern Ontario's Farmland: Challenges and Opportunities (Farmland Preservation Research Facts and Figures in the Greenbelt. (Friends of the Greenbelt Occasional Paper Series, sixth instalment, February 2008). Retrieved from http://www.greenbelt.ca/research/greenbelt-agriculture-a-breakdown-of-agriculture-facts-and -figures-in-the-greenbelt.

Wegener, J. (2009). "Alternative" food outlets and their relevance to policy and planning decisions. *Plan 49*, (2): 46-48.

Young, J. & Watt, A. et al. (2004). Towards sustainable land use: Identifying and managing the conflicts between human activities and biodiversity conversation in Europe. *Biodiversity and Conservation 14*, (7): 1641-1661.