Competing and Conflicting Land Uses at the Rural-Urban Interface:
Understanding the Impacts of Residential Development on Agricultural Landscapes

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Dedication

This thesis is dedicated to my grandparents who always encouraged my academic pursuits.
Abstract

Rural communities are currently undergoing rapid restructuring as globalization impacts the future viability of many small towns. Agricultural regions throughout Canada, in particular, Niagara-on-the-Lake, are forced to adapt to changes within the industry. In addition to these challenges, sprawling residential developments from nearby urban centres are changing the dynamic of this town, resulting in conflicts between the residential and agricultural land uses. This thesis explores these conflicts from the perspective of the residents and the farmers. It was found that the initial sources of conflict related to noise-generating farm activities are no longer a concern, while the use of pesticide have become a source of contention among the residents. The farmers, alternately, were found to be proactive and strived to limit the potential for conflict with adjacent residents. Lastly, it was determined that planning legislation aggravates land use conflicts within Niagara-on-the-Lake and need to better address these land use conflicts.
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Chapter 1
Introduction

Many rural areas throughout the Western Hemisphere are currently undergoing a transformation as rapid population growth reshapes their natural and built landscapes. This growth is most often associated with urban sprawl, as seemingly uncontained and uncontrolled development moves constantly outward from urban areas to surrounding rural locales (Cadieux, 2009), commonly known as peri-urban regions, exurban regions or the rural-urban fringe. This sprawling growth is characterised by low-density development on seemingly underutilized or underdeveloped land (McKenzie, 1996; Houston, 2005). Amongst the most prominent is residential development as the promises of the rural idyll, a romanticized vision of pastoral or bucolic landscapes (Yarwood, 2005), often draw residents from urban areas, as amenity rich landscapes offer an escape from city life (Esparza & Carruthers, 2000). Residential development within these rural areas has created a fissure between those living traditional rural lifestyles and those seeking the rural idyll, as competing and often conflicting land uses reshape rural areas. As a result of the influx of formerly urban residents, rural landscapes are undergoing significant economic, social, cultural and environmental changes to better reflect these new residents understanding of the rural idyll. Existing rural residents, therefore, are expected to be adaptive and flexible in the rapid restructuring of their built and natural landscapes, as new residential developments and exurban residents rapidly change the landscape.

Of particular interest are the implications of residential development in traditionally agrarian rural landscapes. As new residents are drawn to the countryside by the rural idyll, they are often unprepared for the externalities associated with farming.
activities that take place on adjacent farmland. The sights, scents and noises associated with agricultural practices often distort the meaning of the rural idyll, leaving new residents unhappy with their new locale. As a result, conflicts emerge between these two land uses, as residents desire a bucolic countryside and farmers remain determined to work in their fields. These conflicts are evident in Niagara-on-the-Lake, a small rural community in Southern Ontario, highly desired by new residents for its amenity value. As a result of the adjacency between agricultural and residential land uses, conflicts have been a common occurrence. Complaints generated by residents regarding agricultural activities are well documented in the community’s newspaper, *The Niagara Advance*, as farm activities – including noise-generating ones, in particular – have been a catalyst for conflict.

In an effort to limit residential development within this and similar farming communities, the provincial government created the *Greenbelt Act, 2005* to halt the encroachment of sprawling development. The creation of the Greenbelt confirms the provincial government’s recognition of the value of farmland and other sensitive natural landscapes and the necessity to protect them from development. Despite these measures, however, rural residential development has not been eliminated, as we still see a number of developments occurring or planned to be situated on or near agricultural land. Thus, in spite of these protectionist measures, questions remain as to what sort of impacts residential development will have on Niagara’s agriculture and generally about the compatibility of residential development on agricultural landscapes. Accordingly, this research addresses the following questions:

- To what extent have the existing and expanding developments impacted or have been impacted by nearby agricultural land uses?
• To what extent have planning policies mitigated issues related to residential and agricultural land uses?

• What lessons can be drawn from this research for future residential development adjacent to agricultural lands?

The research is outlined according to these questions and each question will be discussed in a stand-alone chapter. The first question will be divided into two distinct chapters, as Chapter Four will explore how residents are impacted and Chapter Five will analyze the farmers’ perspective. Furthermore, the latter two questions are built upon the findings of the first question and are organized cumulatively within my thesis. The remainder of this introductory chapter will provide an overview of themes dominant in each of the following chapters.

Chapter Two provides a literature review analysing the changing structure of rural communities. I discuss the implications of rural restructuring at an economic, political, environmental and social level, detailing the challenges rural communities must overcome. In particular, I examine the impacts of rural restructuring on social capital, linking the increasing heterogeneity of these communities with a decline in stocks of social capital. The loss of social capital is directly related to conflict resolution, as trust is lost and compromise becomes impossible. This chapter also examines how agricultural restructuring has impacted rural communities, documenting the transformation of farming from small-scale family businesses to large-scale factory conglomerates. This transformation has altered the social structure of rural communities as the family unit is replaced by agri-businesses focused on economies of scale and corporate policies. These general rural community transformations are then examined in a Canadian context, before
more specifically focusing on rural restructuring in the Niagara Region, a grouping of twelve municipalities, which include the focus of this thesis, Niagara-on-the-Lake.

In Chapter Three, the site of my case study and my methodology are presented, as I explore the merits of utilizing interviews, surveys and document analysis. In addition, I explain the limitations associated with my data and challenges I faced in collecting it. As I attempted to interact with two diverse groups of stakeholders, residents and farmers, my positionality greatly influenced my rates of participation. Considering this, I provide a significant analysis of how my positionality influenced my data collection and interpretation of the findings.

Chapters Four and Five address the first research question, analysing how residents are impacted by agriculture land uses and how farmers are impacted by residential land uses, respectively. My findings in Chapter Four explore the history of the original conflict related to noise-generating farming activities and whether the conflict still exists. It will also analyse other farm activities, such as the use of spray fertilizers and pesticides, to understand if residents are impacted by them. This chapter will explore possible solutions residents believe can be applied to reduce the potential for conflict regarding farming practices. Chapter Five, alternately, will explore how farmers are impacted by residential land uses. This chapter utilizes both farmer surveys and interviews in order to get a more in-depth understanding of how they are impacted. It follows a similar outline as Chapter Four, as it also examines potential solutions to these conflicts, as suggested by farmers.

In Chapter Six, the second research question, the extent to which planning policies have mitigated issues related to residential and agricultural land uses, is
addressed. While the intent of this study was not to analyze the future viability of
agriculture, this topic often arose in the collection of data. As such, the impacts of
planning legislation on the viability of farming were explored, as these policies were
considered aggravators that frustrated farmers, thus creating a tense environment. I argue
that conflicts within the community are impacted by these policies, as farmers often feel
bullied or taken advantage of by top down planning measures that are out of their control.
In this chapter I also argue that planning policies at a local level could mitigate certain
conflicts, as development conditions are attached to a plan of subdivision before such
plans are approved.

Chapter Seven addresses the final research question regarding lessons to be drawn
from this research for future residential development adjacent to agricultural lands. It
does so by providing three key recommendations. First, I argue that buffers, vegetative
buffers, in particular, should be required on new residential developments adjacent to
agricultural land uses. Second, I critique the problems associated with general planning
policies, such as the Greenbelt Act and the importance of supporting strategies. Lastly, I
maintain that through education and communication many of the conflicts detailed in this
thesis could easily be avoided and strong levels of social capital can be restored.

In the final chapter of this thesis, I provide a synopsis of my findings and provide
linkages between Chapters Four, Five, Six and Seven. I strive to validate my findings by
re-evaluating the sources of conflicts in Niagara-on-the-Lake, thus, justifying the lessons
I recommend. I conclude this thesis with a reminder of the implications of rural
restructuring and the necessity of a small town to encourage cooperation and build stocks
of social capital in an effort to ensure a prosperous future.
Conclusion

My research questions were designed in a manner that identified a problem, analysed the policy implications of these problems and offered solutions for future developments. It was my intention to identify lessons from land use related conflicts so that future developments, many already in the planning stages, can be adapted to avoid these same issues. Considering my objectives I highlight the experiences of both residents and farmers to provide a balanced perspective on these conflicts and as such, my recommendations include both groups of stakeholders.
Chapter 2
Literature Review: Rural Restructuring and Resiliency

Research in rural geography has been largely transformed due to the restructuring of rural communities. My research is guided by this restructuring as the conflict I studied has largely been influenced, enhanced and magnified by the changes and adaptations rural communities have been forced to accept. My research has been largely influenced by studies exploring agricultural restructuring and amenity migration, as each topic generally forms one side of the conflict. The goal of this chapter is to provide an overview of academic literature pertaining to the transformation of rural communities, including both the agricultural transformation and social transformation experienced with urban population migration.

This literature review is organized into three broad sections. It begins by exploring rural restructuring, including changes to the economic structure of rural communities and the characteristics of the residents who inhabit them. The second section explores rural agricultural restructuring, examining how agriculture has been impacted externally by changes to the industry and internally by changes within the communities. The final section focuses on a Canadian perspective regarding agricultural restructuring before moving onto an analysis of the transformation affecting the Niagara Region, where Niagara-on-the-Lake, the focus of this research study, is located.

Rural Restructuring

Rural restructuring has led to the complete transformation of many communities, as they are forced to accept changing populations, economies, social structures, and political institutions. According to Halseth et al. (2010, 5), “restructuring may be understood as changes in economy, government, and environment that shift established
patterns of economic development and political responsibility.” Restructuring is also directly related to globalization, the increasing interdependence of the world’s economies and societies, which reduces trade barriers and local investment (Millward et al., 1999). In rural areas, this restructuring often occurs at a national and global level, beyond the control of individual communities, where the issues associated with globalization “exacerbate the already precarious situation in many rural districts in both the global North and South” (Bardhan, 2006, in Wilson, 2010, 365). In particular, Sumner (2007) found rural regions dependent on manufacturing to be negatively impacted the greatest, describing such restructuring as devastating for these places. The pressures associated with globalization and resulting restructuring have been documented in Australia (Holmes, 2006; Holmes, 2002; Sorensen, 1999), in the United States (Shumway and Jackson, 1999; Che, 2010; Harrington, 2010) and throughout Western Europe (Willemen et al., 2010). Sumner (2007) also found similar instances of restructuring in Canada, particularly in northern logging towns, prairie farm communities, and resource-rich western coal mining settlements.

**Multifunctionality and Post-productivism**

This restructuring has forced rural areas to adapt, thus testing the resiliency of communities, as many flounder while few prevail. Wilson (2010, 367) defines this resiliency as “the ability of a system to absorb impacts/disturbance and to re-organise into a fully functioning system, as well as post-event adaptive processes.” Comparatively, the vulnerability of a community can be based on the sensitivity of a system and its inability to mitigate against risks, hazards or change (Cutter et al., 2008; Wilson, 2010). In an effort to overcome the risks of globalization, rural restructuring is often said to have
transformed these landscapes from “places of production” to “places of consumption.” With the uncertainty of global markets, many rural areas have shifted to a more localized foundation, as producing goods was no longer the focus and, instead, the consumption of the landscape became the priority (Mather et al., 2006). The consumption of the landscape is done in a variety of ways, most often through tourism, as communities exploit nostalgic images associated with the rural idyll. Marsden (1995) found that the production of food was no longer the primary role of rural areas and, instead, the pursuit of consumer-based benefits, such as environmental stewardship and the preservation of the landscape, became part of rural economic policy. The commodification of the rural landscape does however, have many drawbacks; in particular, communities risk destroying the landscape through over consumption (Woods, 2011). Mitchell (1998) describes this risk as creative destruction, where commodification results in negative impacts environmentally, such as pollution and culturally, where the commercialization of a community becomes too far removed from their initial rural charm.

This transition from a dependence on production has been termed post-productivism, as rural regions are no longer dependent on the production of goods, but rather on the consumption of services (Shumway & Jackson, 1999). Fitzpatrick (2004) suggests, “post-productivism might be formulated as a post-employment approach in which multiple forms of valuable activity, both formal or informal, are identified and nurtured” (218, in Mather et al., 2006). In this sense, landscapes provide value beyond tangible goods, as they also hold environmental value and require an ethics of care (Mather et al., 2006). In addition, post-productivist areas have more diversified economic
activities, most often through the provision of services entrenched in the protection of the landscape (Bergstrom, 2001).

While a transition from production to consumption is evident within rural areas, post-productivism has become a contested term, as the word “post” implies moving beyond the land and any form of production (Marsden et al., 1993; Mather et al., 2006; Wilson, 2008). Indeed, Ilbery and Bowler (1998) theorize that post-productivism is a reversal of intensification, concentration and specialization, and instead, refers to diversified, extensive and dispersed landscapes. Such straightforward and simplified descriptions of post-productivist landscapes are challenged, however, as the diversified uses often remain dependent upon some form of production, therefore eliminating the possibility of applying the term “post” (Mather et al., 2006). As post-productivism can be taken to mean little more than rural restructuring, or rural change (Hoggart & Paniagua, 2001), Wilson (2001) argues that “multifunctionality” is a better term to use in describing the restructuring and contemporary use of rural landscapes. Barkmann et al. (2004) define the multifunctionality of a rural landscape as “the phenomenon that the landscape actually or potentially provides multiple material and immaterial ‘goods’ to satisfy social needs or meet social demands” (454, in Willemen et al., 2010). The multifunctionality of rural areas is based on an amalgamation of the forces shaping rural landscapes, as political, economic, social and cultural forces influence a community’s resiliency (Wilson, 2001). The resiliency of a community is further challenged by the accelerating rate of globalization as rapidly changing markets influence and guide many of the forces listed above, limiting local control (Wilson, 2010).
**Population Restructuring**

While the term multifunctionality provides an adequate theorization for the current restructuring of rural landscapes, an interesting phenomenon related to this change is through population growth. The end of the twentieth century depicted a slowing of traditional migration patterns, as population decline through the outward migration from rural areas to urban centres was reversed. Population growth in rural areas is predominantly attributed to exurban migration as urban residents abandon cities in favour of the rural countryside and the sprawling of urban development into rural fringe landscapes (Walford, 2010). These peri-urban or fringe landscapes, considered rural due to low density and their economies’ dependence upon the land, have experienced unprecedented population growth and residential development (Bryant, 2010). This notion of counterurbanization, the migration of former urban residents to non-metropolitan areas (Argent & Rolley, 2008) has been considered a “rural repopulation,” “population turnaround,” and “rural population renaissance,” as urban migrants, searching for an idyllic lifestyle, have descended upon rural communities that are often perceived as safe, secure and natural landscapes (Walford, 2010). Such trends are evident in the United States, Western Europe, Australia and Canada, indicating a common theme in developed nations. This movement of people, however, is not equal amongst rural areas or demographics, as amenity rich regions and rural-urban fringe areas tend to experience the greatest migration levels. Furthermore, those migrating to the rural-urban fringe are most typically middle-class households and those at or near retirement age (Walford, 2010).
Amenity migration, the migration of residents into rural areas due to their natural or cultural amenities, such as agricultural landscapes or historical features (Gosnell & Abrams, 2011), has long-term implications. This form of migration is based upon the marketing of the rural idyll, where landscapes are promoted and desired for their bucolic aesthetic (Beesley, 2010), such as rustic mountain villages or pastoral farming communities. Amenity migration is often desired in many rural areas facing restructuring, as the dependence on landscapes of production decline and the future longevity of these areas are unknown. Amenity migration seemingly offers a desirable solution as the influx of new residents reverse population loss, while providing a greater tax base for declining communities. While beneficial, this increased tax base is often associated with significant increases in the cost of housing and land due to the increased incomes of new residents and demand they place on available housing stock (Hammer & Winkler, 2006; Loffler & Steinecke, 2007). These migrants are generally motivated by a feeling of escapism as they abandon dense urban areas in favour of more natural rural landscapes that offer proximity to nature, recreation and an improved quality of life (Kendra & Hull, 2005). Such migration has been referred to as “rural gentrification,” linking the facets of urban gentrification to rural areas (Phillips, 2004) and “greentrification,” explaining the importance of natural landscapes to amenity migrants and the process in which natural landscapes become protected, consumptive commodities for new upper class residents (Smith, 1998; Smith, 2002).

The move from places of production to places of consumption has resulted in conflicts between traditional and modern land uses, as is seen with tourism in amenity rich regions, economic diversification in declining communities, and new residential
developments abutting traditional rural land uses, such as aggregate extraction or agriculture (Daniels, 1999; Sullivan et al., 2004; Argent, 2010). The meanings attached to rurality and the rural idyll by urban migrants are considered social constructions (Halfacree, 1994; Cadieux, 2009) and, as such, their understandings or expectations of rurality are often in conflict with those held by long-term residents (Yung et al., 2003). Agricultural areas, in particular, are often sites of conflict as new residents are frequently offended by the sights, sounds and smells associated with farming (Sharp & Smith, 2003; Jackson & Kuhlken, 2005).

Conflicts are not limited to the realities of the rural idyll and also emerge in amenity regions through development, most often in the form of residential land uses, which scar the same natural landscape that the new residents hold in such high esteem. Such development diminishes the amenity value of these areas and leads to conflict between old and new residents regarding acceptable levels of development and types of land uses. Pond (2009a) found that the migration of urban residents into rural areas is problematic, as this population influx transforms the local ambiance, extends the urban shadow, and fragments the landscape through development of the natural amenities. Such transformations are also evident in agricultural areas as farmland is turned into residential land or ranches are transformed into hobby farms, reconstructing not only the landscapes, but the traditional activities and social relationships that were common in these areas (Marsden et al., 1993). In general, this development often results in conflict between new and old residents in regards to the competing land uses, as the realities of life in these landscapes often do not fit with newcomers’ perceptions of the “rural idyll” (Bennett, 1996; Cantrill, 1998; Marcouiller & Green, 2000; Yarwood, 2005). Such issues
are of interest to geographers, as trends related to exurbanisation and population growth result in conflict and competition, creating unprecedented implications for rural communities.

**Restructuring Social Capital**

While conflict between old and new residents regarding traditional and modern land uses is a predictable outcome within newly heterogeneous areas, conflict resolution has become complicated and, in some cases, seemingly impossible. One reason for the stalemate experienced in many of these conflicts is in regards to social capital, or the decline thereof. Social capital is based upon networks, interactions, norms and trust established between different individuals or groups (Sharp & Smith, 2003). It is believed that social capital can be activated and that it can be utilized for education, to garner social mobility, to encourage economic growth, to increase political prominence, or to enhance community vitality (Wall et al., 1998). According to Richling (1985), social capital is central to rural economies, societies and environments as it is deeply engrained within rural lifestyles. Putnam (2000) argued that at the local level, social capital based upon people who know and trust one another would enable these individuals to more easily resolve a conflict. While social capital is often considered in political, economical and sociological studies, it is also geographical as it is directly relational to place; that is, social capital is shaped by individuals who are influenced by their location (Mohan & Mohan, 2002). Furthermore, place plays an important role in building social capital as “perceptions of place shape individual and collective action and provide the locales for connections between people and community” (Hanna et al., 2009, 33).
Social capital is also strongly influenced by networks of bonding and bridging capital, two aspects that connect groups of people. Bonding social capital “exists within comparatively homogeneous, tight-knit groups, such as families, close friends and neighbours” (Ring et al., 2009, 176), while bridging social capital “reaches beyond the tightly bonded group to more heterogeneous groups with looser connections, such as networks of acquaintances and associates” (Ring et al., 2009, 176). While developed networks of bonding social capital is more common in rural areas, they risk becoming exclusionary, acting against diversity and stifling innovation (Besser et al., 2008; Hanna et al., 2009). Bridging social capital, however, has the potential to cross group boundaries, bring different people together and encourage the development of community wide interests (Besser, 2009, 186). If, however, bonding and bridging social capital is strong, rural communities can more easily face challenges associated with restructuring.

Where social capital, including both bonding and bridging, is strong, conflict resolution is easier to mitigate. Where it is weak, however, conflicts often last longer or are increasingly difficult to resolve. In areas experiencing high levels of migration, social capital is often low, as old residents and new migrants have little direct social interaction (Sharp & Smith, 2003). The lack of interaction, weak sense of community, and disruption of trust and norms attributed to population growth significantly weaken established social capital and magnify conflicts within rural communities. Smith and Sharp (2003) found that levels of social capital between farmers and non-farmers in rural communities were directly related to levels of support and tolerance within non-farmers attitudes towards farmers and farming activities. Similarly, Kelsey and Vaserstein (2000) found that issues between farmers and non-farmers in rural Pennsylvania confirmed that
lack of social capital, expressed in limited communication and lack of trust, exacerbate conflicts related to farming activities. While social capital will not eliminate conflicts between contrasting groups in rural areas, the existence of strong social capital relates to trust between parties and can aid in the resolution of some conflicts. The constant influx of new residents, however, significantly impedes the strength of social capital and the ability to encourage communication, garner trust and understand norms in rural locales.

*Rural Agricultural Restructuring*

Globalization and rural restructuring have significantly impacted rural agriculture, as restructuring of the industry has both prompted and resulted from technological advancements, capital intensification (Woods, 2011) and corporatisation of fertilizer, seed and equipment production and sales (Smithers et al., 2005; Skogstad, 2008). This restructuring is tied to the global economy as peripheral nations compete with the West to produce high yields of relatively inexpensive crops and produce. As a result, the cost of inputs rapidly increases in developed countries, but the value of the outputs decrease, reducing the profitability of agriculture and future viability of farming. To combat such cost-related issues, farming has rapidly changed, as large-scale factory farms are quickly replacing the family farm, where land is corporately owned and production is highly intensified (Sumner, 2007). Such issues are evident in Western Europe (Moyer & Josling, 2002; Potter & Tilzey, 2007; Morgan et al., 2010) and much of North America (Qualman, 2001; Ramsey et al., 2005). As a result, agriculture has also moved beyond a productivist focus as multifunctional landscapes and diversification of income through off-farm labour and agri-tourism reshape the traditional family farm (Che et al., 2005; Smithers, 2005; Bessant, 2006). When changes to agriculture are coupled with migratory
trends, conflict arises, as new exurbanites do not include intensive agriculture within their perception of the rural idyll (Caldwell, 1998; Caldwell & Ball, 2003).

Agricultural restructuring has also led to concerns regarding the future viability of farming within developed nations. Global competition and corporatisation of agriculture have seemingly diminished the plausibility of operating small-scale family farms, as costs increase and profits decrease. Furthermore, neo-liberal economic policies and trade agreements encourage global agriculture, which result in low commodity prices and unfair international competition, leaving farmers with diminishing returns (Lawrence et al., 2001). Economic concerns, coupled with environmental issues, such as the contamination of soil and deterioration of the quality of the soil through pesticides and fertilizers, mono-cropping and water contamination have weakened the stability of agriculture throughout North America (Epp & Whitson, 2001), Western Europe (Ilbery & Bowler, 1998) and Australia (Vanclay, 2003). The future viability of agriculture is a concern for geographers as the crisis of food security, the ability to have sustained and continuous access to food (Guthman, 2009), is threatened by the development of agricultural land. Furthermore, the loss of agricultural land contradicts the idea of sustainable development, “development that meets of the needs of the present without compromising the ability of future generations to meet their needs” (World Commission on Environment and Development, 1987, 43), as secure and stable access to food cannot be guaranteed. Considering this, citizens are left in a state of food insecurity as local agricultural land is reduced and nations are forced to depend on a foreign food supply.

Recognizing the importance of agriculture and, more specifically, the importance of locally sustainable agriculture, the global restructuring of this industry has
significantly impacted the longevity of traditional farming in rural areas. As such, the removal of family farms is associated with a disconnect within agriculturally-based communities as the restructured social and economic life associated with factory farms reduces the prominence of towns, as they are no longer central places of exchange, service and support (Smithers, 2005). The focus of so-called factory farms or agri-business is on mass production and increased profits, which remove social interaction at a local level, threaten the viability of rural communities, and increase environmental degradation and reliance on non-renewable resources (Dasupta, 2001). This transformation to agri-business and large-scale farming diminishes social interactions within rural locales and decouples farmers from the community as interactions shift from horizontal to vertical alignment (Marsden, 1998; Smithers & Johnson, 2004; Smithers et al., 2004; Smithers, 2005). Alternatively, it can be argued that family farms, with a small-scale, local commitment, ensure food sovereignty and increase food security through a more sustainable form of agriculture, as well as engage communities through horizontal alignments (Dasupta, 2001). Regardless of the social, environmental and economic impacts of agri-business, the decline of family farms is a common trend within the restructuring of rural agriculture.

**Developing Agricultural Land**

One of the greatest threats to agricultural land across North America and Western Europe moves beyond the production of crops or maintenance of livestock; development, most often in the form of residential development, has been consuming productive agricultural land at unprecedented rates. Development of agricultural land is most common in peri-urban areas or rural-urban fringe landscapes, where the proximity to
urban centres encourages sprawling development. The value of farmland near urban areas is often greater than the return farmers receive on their crops or livestock and, as such, the temptation to sell to developers is often too difficult to resist (Daniels, 2007). For example, Longcore (2000) found that apple orchards in Michigan were worth double their market value as residential or commercial development than they were for fruit production. It becomes difficult, therefore, for farmers to continue labouring in their fields when their profits are a mere pittance in comparison to the value their land holds for development. The desire for such unsustainable development has been strengthened by a misguided desire for space, dependency on the automobile and lack of concern for the availability of rural resources (Gayler, 2005). Indeed, the loss of agricultural land is wholly unsustainable; once farmland is paved over, it cannot revert back to its original use, thus turning agricultural land, especially land near large metropolitan areas, into an endangered land use at risk of becoming extinct.

Problems associated with the loss of agricultural land go beyond issues of sustainability as new development transforms rural communities. Of particular importance is the loss of traditional farming practices, economic benefits, community and social characteristics, and overall quality of life (Heimlich, 1989). The fragmentation of agriculture also results in the erosion of viable agricultural operations and support services. As the number of farms decrease, the need for agriculture-centred services and facilities also decrease, or disappear entirely. Furthermore, the fragmentation of agriculture due to changing land uses makes farming a more complicated process for those who continue in this field. Pfeffer and Lapping (1995) discuss many of these complications, explaining the effects of parcelization as development separates farms,
thus reducing efficiency while increasing costs. Such scattered development has also been referred to as “death by a thousand cuts,” as productive agricultural land is destroyed through parcelization (Gayler, 2010, 317).

Recognizing the importance of agricultural land, many countries have enacted protectionist measures in an attempt to preserve this unique landscape. Throughout the United States, for example, farmland preservation has occurred through a variety of methods. Pennsylvania has successfully preserved more than 300,000 acres of farmland (Daniels, 2000), Maryland’s Smart Growth initiatives have protected 200,000 acres of farmland and Vermont, Colorado and New Jersey have each preserved 100,000 acres of farmland. Of particular importance is a joint public-private preservation project in Vermont, which has garnered public support and guaranteed funds to manage the program (Daniels, 2007). Such initiatives are, however, not widespread or equally applied. In Australia, for example, a misconception regarding the seemingly endless supply of available land has resulted in planning policies that are wholly inadequate for protecting farmland or guiding development. In fact, protectionist policies that have been proposed have generally been banished when confronted by developers or landowners not willing to have their land uses limited (Budge, 2007). Farmland preservation needs to be an important consideration if farmland is to remain available for future generations. Unfortunately, it often appears that development, seen to be an easy and quick source of financial prosperity, usurps the importance of preserving agricultural land in many rural communities.
Transforming Canadian Agriculture

The transformation of agriculture is also a prominent issue in Canada and has captured the attention of Canadian rural geographers. Restructuring of the industry over the past several decades through intensification, mechanization and corporatization has resulted in an increase in productivity and efficiency through large-scale agri-business, resulting in the loss of small-scale family farms (Smithers, 2005). The apparent necessity for mass production and factory farm enterprises has resulted in a 7.1 percent decline in the number of farms and 5.5 percent loss of farm operators between 2001 and 2006 across Canada (Hilts et al., 2008). This trend has continued between 2006 and 2011, as the number of farms decreased by 10.3 percent and the number of farm operators fell by 10.1 percent (Statistics Canada, 2012). In Ontario, total farm area decreased by 4.8 percent, while average farm size increased from 233 acres to 244 acres over the same time period (Statistics Canada, 2012). These statistics generally support observations regarding the transition towards large-scale agriculture throughout Canada as the number of operators’ decreased, while the size of the remaining farms increased. The transition from small-scale farming to large-scale agri-business is most evident within the Prairies, where the average farm size was significantly higher; 675 hectares in Saskatchewan, 473 hectares in Alberta and 459 hectares in Manitoba (Statistics Canada, 2012). The growth in farm size is also associated with the industrialization of agriculture, as a reliance on machines, fertilizer and pesticides has made the cultivation of crops and maintenance of livestock efficient and effective at a large scale (Ramsey et al., 2005).

Beyond changes to the scale of farms, global markets and increased competition have forced farmers to diversify and follow the broader agricultural trends towards
multifunctionality (Bryant, 2010). Across Canada, agriculture is being transformed, as farmers feel the need to grow more profitable crops as traditional grains and tender fruit, among others, are no longer economically feasible. This is most evident in the popularity of canola or other bio fuel crops, as many farmers switch from growing consumptive products for more profitable, non-food agricultural alternatives (Veeman & Gray, 2009). This trend is worrisome, as a stable and sustainable food supply is altered, resulting in food insecurity by increasing Canadians’ reliance on foreign food.

Food security is further threatened in Canada by the constant encroachment of urban development on rural landscapes. In fact, in 2001, Canadian cities consumed three percent of all agricultural land, including seven percent of Class One soil (Statistics Canada, 2005). This development, most often in the form of residential uses, consumes agricultural land as it is relatively inexpensive and easy to transform. As a result, suburban communities and peri-urban regions are created within traditionally agricultural rural landscapes, permanently altering the soil and surrounding areas. The redevelopment of agricultural land radically reduces food security, as once this land is developed it cannot be converted back to its original use.

The loss of agricultural land for development purposes in Canada is problematic. Despite being the world’s second-largest country, only five percent of all land in Canada is suitable for agriculture and, of that five percent, less than one percent is labelled as the most productive and unrestrictive Class One soil (Hofmann et al., 2005). Class One agricultural land is the most threatened within Canada, as the majority of such land is continuously under threat of development by abutting urban areas (Brouwers, 2009). Most significantly, Ontario has the greatest proportion of Class One land in Canada, with
approximately 56 percent of this soil class found within the province. The concentration of such arable land in Ontario is a concern, however, as the majority of this land “lies within a hundred kilometres of the edge of Canada’s largest and fastest growing metropolitan area – Toronto” (Troughton, 2007, 52). As such, urban sprawl continues to be a legitimate threat to Canada’s most productive rural agricultural landscapes. Sprawl is not only limited to the creation of subdivisions, but is also seen through the conversion of farms into rural estates (Miner, 2012). According to Mark Wales, the president of the Ontario Federation of Agriculture, “A lot of people who want to build a house [in rural areas] are buying the farm, maybe tearing down the old farmhouse and putting a really nice estate home on it, and they may or may not do anything with the land” (Miner, 2012). The threat of residential development, it appears, has moved beyond the obvious sprawl of large scale neighbourhoods and, instead, has spread into the countryside.

**Restructuring Rural Niagara**

The restructuring of rural agricultural areas is also apparent in one of the most significant agricultural areas in Canada. The Greater Golden Horseshoe (GGH), a metropolitan area encompassing 32,000 square kilometres of land along the western shores of Lake Ontario (Pond, 2009a) is a unique mix of urban metropolis and rural countryside. The GGH is home to 7.5 million people and includes the Greater Toronto Area, considered one of the fastest growing regions within North America. Within the GGH is the Regional Municipality of Niagara, a diverse grouping of twelve municipalities located between Lakes Ontario and Erie and to the west of the Niagara River. This unique municipality is a mixture of both urban and rural areas, with a valuable agricultural base dominated by specialized crops, including horticulture, grapes
and tender fruit (Caldwell & Dodds-Weir, 2007). The Niagara Region is one of the most significant agricultural areas in Canada due to its unique climate moderated by the Great Lakes and Class One soil, which permits the production of crops not viable in other areas across Canada (Chapman, 1994). As such, the agricultural landscape in Niagara is highly desired due to the rare combination of favourable climate and soil (Regional Municipality of Niagara Region, 2010a).

Rural agriculture in Niagara is, however, in a state of transition, as restructuring associated with global competition has diminished the demand for crops and resulted in the closure of local food processing plants. The recent closures of, for example, the CanGro Foods canning factory in St. Davids and the Cadbury-Schweppes juice plant in St. Catharines have left farmers throughout the Region without a buyer for their produce (Gayler, 2010). The results of global change have negatively impacted local farmers as globalization and economies of scale have threatened the viability and longevity of agriculture within Niagara and exemplify issues associated with rural restructuring in Canada. In response to the loss of buyers, agriculture in Niagara has been forced to diversify, with agritourism and niche markets rapidly growing. While much of this diversification has focused on wine, wineries and winery restaurants, other activities such as farm tours, festivals, pick-your-own fields and fruit stands (Eaton, 2004) are all evident across the Region as farmers strive for local revenue amongst global hardships.

While farmers are threatened by global economies, they are also impacted by urbanization, as the Niagara Region is on the edge of Canada’s largest urban agglomeration. The GGH, which includes Canada’s most populous city, is expected to grow by 3.7 million people over the next 30 years (Fung & Conway, 2007). Alarmingly,
much of the residential development is expected to occur as Greenfield development within existing urban area boundaries, threatening the Niagara Region’s agricultural land (Caldwell & Hilts, 2005; Ali, 2008). Agricultural land in Niagara was first threatened by development with the construction of the Queen Elizabeth Way (QEW), the first four-lane highway in Canada. The QEW was problematic as it paved over active farmland and encouraged further non-farm development, such as residential land uses, on active agricultural land (Hill, 2002). The loss of agricultural land has long been evident within Niagara, as 40% of the unique arable land has been lost in the northern part of the Region since World War II and much of the remaining land is continuously threatened by development (Gayler, 2010). In an effort to combat urban sprawl and protect the remaining agricultural land, the Ontario government passed the *Greenbelt Act* and enacted the Greenbelt Plan in 2005. The Greenbelt, depicted in Figure One, is a section of land totalling 1.8 million hectares of countryside in Southern Ontario, has been protected from urbanization and development (Pond, 2009b). The Greenbelt was planned to protect sensitive landscapes, including both the Niagara Escarpment and the Oak Ridges Moraine in conjunction with agricultural land throughout Southern Ontario, in an effort to protect these areas from sprawling development. Specifically, within the Niagara Region, much of the area’s Class One farmland, totalling approximately 100,000 acres, is protected (Pond, 2009b).
The creation of the Greenbelt in Ontario confirms the government’s recognition of the value of farmland and other resources and the necessity to protect it from development. Despite these measures, however, rural residential development has not been eliminated, as we still see a number of developments occurring or planned to be situated on or near agricultural land. Thus, in spite of these protectionist measures, questions remain as to what sort of impacts residential development will have on Niagara’s agriculture and generally about the compatibility of residential development on agricultural landscapes.

Conclusion

Within this literature review I have examined how rural communities are being restructured and how the impacts of this restructuring, through global markets, population
changes and policy guidelines have impacted rural agricultural communities. Rural restructuring has had a profound impact on the economic, environmental, political and social structures of small communities. The threats associated with globalization have forced rural towns to become adaptive and resilient, as their longevity is not guaranteed. One of the greatest features of this resiliency is a dependence on social capital. Bonding and bridging social capital, which encourages trust between various groups has become a necessity. Rural communities that lack social capital are significantly less resilient than those communities that have nurtured it. Impacting the development of social capital, however, is the population growth through migration.

The movement of non-rural residents into small towns significantly impacts social capital, as levels of trust and acceptance of norms are altered. This is especially true in amenity rich regions where growth is the strongest, often resulting in low levels of communication and, in some cases, conflict. Agriculturally dependent communities are often forced to deal with the complications associated with population growth, as non-farm residents reside in close proximity to active farmland. Low levels of social capital, in particular low levels of trust, often result in conflict, as new residents are not prepared for the sights, sounds and smells of farming practices. Furthermore, the sprawling of development into agricultural communities has resulted in a loss of prime agricultural land. In Ontario, the provincial government has made a significant effort to protect farmland from the encroachment of residential development. While beneficial, residential development in agricultural communities continues, and the conflicts continue to arise between these two competing land uses. If rural agricultural areas are to remain
resilient, conflicts associated with land uses must be resolved and stocks of social capital restored.

This chapter serves as a point of reference for my research and positions my research questions within existing literature. Land use conflicts in Niagara-on-the-Lake can be attributed to the encroachment of residential land adjacent to active farmland. If agriculture in Niagara-on-the-Lake is to remain resilient, a deeper understanding of the nature of these conflicts and how they can be mitigated is imperative.
Chapter 3
Methodology

The focus of my study and research questions revolves around the existence of a deep-rooted and often contentious conflict within Niagara-on-the-Lake. With this understanding, my research involved a variety of stakeholders, exploring diverse interests and opinions. The goal of this research was to obtain the opinions of two diverse groups of stakeholders: local farmers and the nearby residents. Given this goal, and the large pool of potential participants I contacted, a variety of research methods were employed. The use of mixed methods, a study methodology that is largely missing in rural geography (Woods, 2010), helped validate my data and added rigour to the research process. The two primary methods I utilized were in-depth interviews and survey questionnaires, as they allowed participants to easily express their own opinions and beliefs. In addition, document and discourse analysis were employed to provide a framework for examining the political and social basis of planning decisions in Niagara-on-the-Lake and the resulting consequences of these decisions. Lastly, an extensive literature review was used to position my research vis-à-vis existing research in rural geography, planning and development.

The following section will begin with an analysis of my case study before detailing my methodology. This section will conclude with a discussion of my positionality in the research and finally examine the challenges that arose during the data collection process.

1 For the purpose of this research, residents refer to individuals who reside in large-scale, planned communities within Niagara-on-the-Lake. Farmers, alternately refer to individuals who work in the agricultural field and reside outside of these communities either in the rural countryside or on farmland adjacent to these developments.
Study Area

Situated along the southern shore of Lake Ontario at the mouth of the Niagara River, Niagara-on-the-Lake is one of the twelve municipalities within the Regional Municipality of Niagara (Figure 2). The Town of Niagara-on-the-Lake is an amalgamation of the former Town of Niagara and the Township of Niagara, which includes the villages of Virgil, St. Davids, Queenston, Homer and McNab. Niagara-on-the-Lake is approximately 12,599 hectares in size and is comprised largely of agricultural land. According to the 2006 census, the municipality has a population of 14,586 residents, with a median age of 49.1 years, significantly higher than the Ontario average of 39 years (Statistics Canada, 2007). This difference in age suggests that Niagara-on-the-Lake is an aging community, due in part to the influx of new residents near or at the retirement age.

Within the Region, Niagara-on-the-Lake is abutted by two large, urban municipalities, St. Catharines to the west and Niagara Falls to the south and as such, is considered relatively rural in comparison. This closeness to larger urban areas has impacted the economy of the town, as it is able to capitalize on the proximity of neighbouring communities for the consumption of goods and services. For example, the proximity to Niagara Falls, an
internationally recognized tourist destination, has allowed Niagara-on-the-Lake to benefit economically by readily expanding its tourist initiatives, initially through historic value and heritage shopping and more recently through wineries and agritourism.

Agricultural Structure of Niagara-on-the-Lake

The economic base of Niagara-on-the-Lake is agriculture, an industry responsible for over 21% of all gross farm receipts within the Region, valued at $143,297,060 in 2006 (Regional Municipality of Niagara, 2010a). Thus, the town is one of the most profitable municipalities within Niagara in regards to agriculture, second only to the Town of Lincoln. Agriculture in Niagara-on-the-Lake is also one of the most productive in the Region, as gross farm receipts per acre are valued at $7,011, second only to the City of St. Catharines. The high value of agriculture within the town is related to the highly productive forms of agriculture found within the community. Greenhouses have narrowly surpassed fruit as the most profitable form of agriculture within the town (Table 1). The increase in the number of greenhouses within Niagara-on-the-Lake is related to the highly productive nature of greenhouses and the economic value of this form of agriculture. While fruit has traditionally been the primary commodity type within Niagara-on-the-Lake, the move to second between 2001 and 2006 has not significantly reduced its prominence on the town’s landscape. Indeed, Niagara-on-the-Lake continues to have the highest acreage devoted to fruits, berries and nuts and is the leader for production of peaches, strawberries, grapes, plums and prunes. The increasing dominance of greenhouses in Niagara-on-the-Lake is, however, an interesting shift as it deviates from traditional agricultural growing practices, such as orchards and vineyards and greatly alters the agrarian landscape.
The value of agriculture within Niagara-on-the-Lake is not restricted to the production of crops, as agriculture has a variety of direct and indirect impacts on the local economy. Most significant within Niagara-on-the-Lake is the dominance of tourism, more specifically, the prominence of wineries and wine tourism. As the majority of Canadian wine production takes place within Niagara (Agriculture and Agrifood Canada, 2009), it is not surprising that viticulture and wine tourism have flourished within Niagara-on-the-Lake. With more than 25 wineries located within the town, wine tourism has effectively taken advantage of the agricultural countryside by transforming a landscape of production into a landscape of consumption. Agri-tourism within Niagara-on-the-Lake also flourishes at a local farm scale, with the success of farm tours, farmers markets, roadside stands and “pick your own fruit” options proving to be largely successful. It is evident then, that the value of agriculture within Niagara-on-the-Lake
goes beyond the mere production of crops, as the produce and landscape are consumed through tourism initiatives and other value added services.

While agriculture in Niagara-on-the-Lake is a prominent aspect of the local economy, changes over the previous decade have impacted the future viability of this industry. The restructuring experienced in rural areas across North America is also evident within Niagara-on-the-Lake, as the global demand for agriculture has affected the local production of crops. Indeed, the 2008 closure of a tender fruit canning plant in St. Davids resulted in the loss of a buyer for 150 farmers within the area. Most of the farmers under contract with the cannery tore out their trees after its closure, as their fruit was not suitable for fresh fruit markets (Gayler, 2010). Perhaps indicative of the plant closure, between 2006 and 2011, the total number of peach farms decreased by nearly seven percent and the total number of acres growing peaches decreased by more than 100 (Statistics Canada, 2012). The loss of such a plant within the local community is a testament to the global restructuring of agriculture and uncertainty farmers face with the future of their crops. While securing a buyer is a main stress for farmers, the continuation of farming in general is a concern within the town. Between 2001 and 2006, the number of farms in Niagara-on-the-Lake decreased by five percent, while the land used for farming shrunk by seven percent (Regional Municipality of Niagara, 2010a). Within the fruit, berries and nuts sector, the second largest agricultural commodity within the town, there were nearly eight percent fewer farms. In addition, the average farm size within Niagara-on-the-Lake is the second smallest within the Niagara Region at 54 acres, well below the average for the Region and the province of 104 and 233 acres, respectively (Regional Municipality of Niagara, 2010a).
While farm sizes throughout the Niagara Region and the province have been increasing over time, Niagara-on-the-Lake has rebuked this trend as farm sizes has actually decreased slightly between 2001 and 2006. The dominance of high intensity agriculture within Niagara-on-the-Lake has, however, proven successful on smaller farms. Perhaps indicative of the towns changing rural landscape, one reason for the smaller farm sizes relates to the desire of new residents to create hobby farms for rural estates. Rural estates, designed for their fulfilment of the rural idyll, are problematic as they create underutilized hobby farms or inactive farms, which significantly reduce the productivity of the land. Indeed, “for the health of the agricultural industry it is important to ensure that those living on farms are actively and productively farming” (Regional Municipality of Niagara, 2010a, 51). While the industry is quite valuable, complications associated with agricultural restructuring and resulting deviations from traditional agriculture are increasingly evident.

One final threat for agriculture within Niagara-on-the-Lake is related to the changing rural landscape and land use patterns. As the rural idyll attracts new residents, residential development on rural landscapes threaten traditional land uses. Specifically in Niagara-on-the-Lake, significant development on agricultural land in the form of residential development has been a major transformation of the rural landscape over the past 40 years. The designation of urban growth boundaries within the Region has been a means of delineating where residential development should occur; however, since their inception in 1974 and finalization in 1981, significant additions have been made to expand and create new urban boundaries. In fact, between 1979 and 2002, 309 acres of agricultural land were added to the town’s urban growth boundary. A larger addition was
designated in the village of St. Davids as this community’s urban area boundary was expanded by 599 acres. In total, between 1979 and 2002, 1,036 acres of land within the amalgamated town of Niagara-on-the-Lake were re-designated from agriculture to residential land uses (Regional Niagara, 2002).

In an effort to reduce the rate of development on agricultural lands, the *Greenbelt Act* was implemented within Ontario in 2005. This Act directly impacted Niagara-on-the-Lake, as agricultural land outside of the urban growth boundary became protected from any form of development. While the *Greenbelt Act* demonstrates the provincial government’s understanding of the importance of agriculture, residential development within Niagara-on-the-Lake has continued and applications to extend the urban growth boundaries and rezone agriculture land within the town have not ceased. In addition, residential development within the urban growth boundaries is often in close proximity to, or abutting agricultural land. As such, a separation of different land uses is not evident and substantial buffers between competing land uses is not standard. While the Greenbelt has been beneficial, it has not eliminated residential development within Niagara-on-the-Lake.

**Neighbourhood Characteristics**

Within Niagara-on-the-Lake, residential development has continued in close proximity to active agricultural land and conflicts related to these two land uses continue to arise. As such, specific residential developments within Niagara-on-the-Lake will be used to explore the impacts of residential development in close proximity to agricultural land uses. The case study sites, as well as characteristics of surrounding agriculture are detailed below and depicted in Figure 3.
Figure 3 - Location of case study sites within Niagara-on-the-Lake (Gasparotto, 2012).

**Pallek Estates**

Located within the village of Virgil, Pallek Estates is a large development, comprised of more than 200 homes. It is within walking distance of the village’s centre and is surrounded by a vineyard to the south, tender fruit orchards to the west and greenhouses to the north.

**The Village**

The Village is located within the Old Town and was designed to follow the new urbanism philosophy of a “sustainable, liveable and healthy community” (Brookfield
Homes, 2012). This development is marketed to upper class individuals, as homes range in price from $300,000 to over $1,000,000. It is adjacent to a vineyard and winery to the south and another vineyard to the west.

Carriage Court Estates

Carriage Court Estates is also located within the Old Town and is an older community in Niagara-on-the-Lake, as development originally began in 1992. This development is centrally located and is within walking distance of many amenities, including the Town’s library and community centre. It is adjacent to a vineyard to the west and a tender fruit orchard to the south.

Shaw’s Lane

Finally, Shaw’s Lane is also located in the Old Town and is a small grouping of 39 townhouses. It is within close proximity of the Old Town shopping centre, where restaurants, theatres and specialty shops are located. This development is adjacent to a tender fruit orchard to the east.

Methodology Employed

This thesis utilized a variety of methods in order to gain a depth of knowledge from a variety of stakeholders. In particular, the main methods I used were in-depth interviews, surveys, and document and discourse analysis related to media publications. Considering that this study required data collection from a multitude of diverse informants, the use of multiple methods was deemed appropriate. In-depth, semi-structured interviews and survey questionnaires were the two primary research methods used in this study. The rationale for using both methods can be found in an understanding of the information gained from each. Interviews were employed in order
to get descriptive data related to complex personal experiences and opinions and provided the opportunity for participants to discuss issues they deemed important (Longhurst, 2009). Alternately, surveys were used to gain a breadth of information from a broad group of participants about personal opinions and preferences (Preston, 2009). Given the potentially large number of participants involved, relying only upon interviews would not have been practical. Conversely, while surveys have the potential to provide a breadth of information, this method alone would not have provided the depth of data needed to fully understand the nature of land use conflicts in Niagara-on-the-Lake. The successful use of multiple research methods has been documented by Smithers et al. (2004), who utilized a variety of methods in their research exploring farm-community interactions in Huron County, Ontario. Similarly, their study also benefited from the use of surveys and interviews to demonstrate rigour and provide both a breadth and depth of information.

**Document and Discourse Analysis**

To begin, document analysis was conducted in order to provide a deeper understanding of planning discourse as it pertained to agriculture and rural development. Discourses are ideas and practices that give texts, statements and rhetoric particular types of meaning or ways of structuring knowledge (Berg, 2009). The focus of my analysis pertains to planning literature developed by various levels of government and how these discourses shape our understanding of rural development. As “text is never neutral or passive in shaping social and spatial outcomes” (Wilson, 2009, 221), it is important to understand the impact and influence of planning discourse on rural development in Niagara-on-the-Lake. An understanding of the impacts related to planning discourse was achieved through an analysis of provincial legislation, such as *Places to Grow* (2005), the

Following Berg (2009), my analysis explores the consistency of such documents by identifying contradictions between policies and tiers of government, as well as the degree to which local development initiatives appear to follow these texts. The validity of these documents and the consistency at which they are followed provide a basis for understanding competing development initiatives and land uses in Niagara-on-the-Lake.

In addition, an in-depth analysis of community newspapers, namely The St. Catharines Standard, Niagara Review and The Niagara Advance, was utilized in my examination to provide insight into the development process and conflicts that have arisen between residents and farmers. Minutes from public meetings and planning notices have also provided evidence as to how new developments are received within the community and how plans are interpreted by town staff. Lastly, the use of developers’ websites, signage and brochures provides evidence of how these communities and landscapes are marketed to potential residents, thus creating a discourse of why newcomers move to Niagara-on-the-Lake. As Niagara-on-the-Lake comprises a multitude of understandings among various groups, such as a place of retirement or leisure, among others, it is important to analyze how this discourse is created, produced and reproduced amongst community members, as these understandings of the countryside have resulted in numerous conflicts.
**Interviews**

In-depth interviews were utilized as a research method as they are considered a tool that will aid in gaining information that is ‘factual’, descriptive, thoughtful or emotionally-based, as well as providing relevant background information regarding development and agriculture (Longhurst, 2009). As I was keenly interested in understanding how farmers are impacted by residential development, I felt that interviewing farmers would provide descriptive and thoughtful insights. The conflict between farmers and residents regarding farming activities has been largely documented in the local media. This perspective, however, has been dominated by the residents’ points of view as farmers rarely write letters to the editor complaining about neighbours or provide written retorts to any of the complaints publicized by residents. As the farmer’s perspective has been largely a silent one, I felt that in-depth interviews with farmers who abut residential developments would provide them the opportunity to discuss how they have been impacted. Since the interviews were confidential, I believed that they would be willing to divulge open, frank and honest opinions of the conflicts between farmers and residents in a less public forum.

**Farmer Sampling Process**

Over the course of five months, beginning in January 2012, as this is often a relatively quiet time of year for farmers, letters of invitation were mailed to farmers whose land was adjacent to one of four residential developments within Virgil and the Old Town. Using records in the Clerk’s office in the town of Niagara-on-the-Lake, addresses were sought in the Town’s address records to determine land ownership. This process was complicated, as many farms are not farmed by the landowner, but are rented
out to individuals or numbered companies. In addition, using Niagara Navigator, a detailed land use mapping database, it became clear that land parcels were not clearly numbered, making it difficult to determine the correct address for some farms. In January, after an extensive search of landowners or renters, nine letters of invitation (Appendix 1) were sent to the farmers who actively farmed the land adjacent to the selected residential developments. Approximately one week after mailing the letters, a follow-up phone call was made, where I attempted to speak directly with the farmer. Of these initial nine invitations, only two farmers responded and partook in an interview. As a result of these low responses, a snowball sampling technique was introduced and participants were asked if they knew other farmers who would be interested in participating in an interview. Snowball sampling proved successful and led to an additional three farmer interviews. One of the three additional interviewees was a farmer who cultivated rented land adjacent to one of the residential developments and the other two farmers were active members of town committees dedicated to agriculture. While two of the five farmers did not have land adjacent to residential developments, their role on town committees demonstrated their keen knowledge of the agricultural industry and issues related to agriculture within Niagara-on-the-Lake. Therefore, they were deemed to be well-qualified, key informants.

While the relatively low rate of participation from farmers was not anticipated, it has been well-documented in previous research. Ramsey and Smit (2002) experienced similar response rates in their study exploring the changing tobacco farming industry and they attributed their high refusal rate to the sensitive nature of their research project. As farmers in Niagara-on-the-Lake have been forced to face hardship and uncertainty
regarding the future of their crops, a study exploring challenges they face can be considered a sensitive topic. As such, the relatively high refusal rate is understandable, given the nature of this study and participants contacted.

Farmer Interview Process

All five interviews focused on the farmers’ perceptions of how residential development impacts farming activities. As the interviews were semi-structured, questions arose out of comments a participant made or when I felt more elaboration was needed. Each interview lasted approximately forty to sixty minutes, although one interview lasted two hours. I began each interview with a brief overview of my research study and answered any questions the participants had before I began. Each farmer was asked the same set of questions, which pertained generally to how farming has been impacted by residential development (Appendix 2). The interview questions were broadly grouped into four categories regarding how farmers are affected by residential development: changing land uses; emerging conflicts; policy and legislation; and, lastly, possible solutions and the future of farming in Niagara-on-the-Lake. The questions progressed in an order that identified the conflict, explored existing solutions and ended with potential alternative solutions. I wanted to provide farmers the opportunity to discuss how they personally have been impacted and what solutions they think are most appropriate. I was ardently interested in whether current planning policies, such as the Greenbelt Act, are viewed as beneficial or if better policies and practices are needed. Additionally, I wanted to know if the conflicts documented in the local newspaper were adequate representations of the issues farmers face, or if the media exaggerated them.
Additional Interviews Sampling and Process

Due to the limitations I experienced in finding farmers willing to be interviewed, it became necessary to broaden my participant pool and interview other stakeholders. As a result of this transition, three more individuals were interviewed in order to broaden my research and validate my initial findings. The three subsequent participants were government representatives and included the town of Niagara-on-the-Lake’s Development Coordinator, an Agricultural Engineer from Ontario’s Ministry of Agriculture, Food and Rural Affairs (OMAFRA) who handles all nuisance complaints related to agriculture, and a former Ontario Minister of Agriculture (OMA). An interview question guide for the Development Coordinator, Agricultural Engineer and former OMA can be found in Appendices 3, 4 and 5, respectively. These three individuals provided three unique perspectives on issues related to residential development near agricultural land, as they each represented a different aspect of agriculture or development. The snowball sampling was again utilized when gaining access to the participant from OMAFRA and the former OMA. The town’s Development Coordinator was approached informally through an inquiry for information via email and was subsequently invited to become a formal research participant shortly thereafter.

The interviews were conducted in a similar fashion as with the farmers, as they were semi-structured and began with an explanation of my research study. The questions I asked to the participant from OMAFRA and the former OMA centred on policy and legislation directly impacting farmers and farm activity. As they were from agriculturally centred ministries, I felt they would be most knowledgeable on these topics. They were also asked questions related to the mitigation of conflicts between residents and farmers.
and what solutions they may recommend to better resolve these issues. The Development Coordinator, alternately, was asked questions directly related to planning procedures in Niagara-on-the-Lake and the considerations that take place when a proposed plan of subdivision is submitted to the Town for planning review. The Development Coordinator was also asked to comment on the public hearing process and if adjacent land uses were given consideration before plans of subdivision were approved. Lastly, and similar to the other interviews, the development coordinator was given the opportunity to make recommendations pertaining to policies which might better mitigate conflicts related to competing land uses.

In hindsight, interviewing representatives of three diverse groups of stakeholders proved to be fortuitous, as it provided a breadth of information and rigour to my study. Relying on farmers alone would have only provided a narrow understanding of the issue and would have lacked the necessary background related to policies, legislation and development considerations. Interviewing individuals more informed about planning and policy matters provided a better understanding of how planning policies have affected the current and future uses of farmland. Since interviews are relevant for collecting a range of opinions on one topic, it was effectively utilized for this research.

**Surveys**

Surveys, the final component of my methodology, were used to gain information from residents of each specified neighbourhood, as well as from other farmers within Niagara-on-the-Lake. A copy of the resident survey can be found in Appendix 6 and a copy of the farmer survey is provided in Appendix 7. Residents of these communities were able to provide personal opinions on how agricultural land uses impacted them and
their sense of place. Alternately, farmers within the town were able to provide insight into the potential impacts that residential development has on agriculture in general and the future they saw for their land and farming within the community. As residential development adjacent to agricultural land is still occurring in Niagara-on-the-Lake, it is important to understand how farmers interpret continued development and the impacts it may have on their own land use activities. In an effort to elicit personal opinions and individual interpretations on this topic (Preston, 2009), both groups were given surveys that employed closed and open-ended questions exploring their perspectives on land use and the issues that arise from each. Similar to Smith and Sharp (2005), respondents were asked a series of questions that utilized a ranking scale, as well as an opportunity to provide additional comments after each grouping of questions.

**Resident Survey Sampling and Process**

Resident sampling for the distribution of surveys was location specific. The neighbourhoods of Pallek Estates, Carriage Court Estates, Shaw’s Lane and The Village were selected due to their adjacency to active agricultural land. Individual homes selected for survey distribution were chosen based on their proximity to agricultural land and as such, only houses that were immediately adjacent to active farmland were approached. Throughout the month of January I hand-delivered and collected surveys from 40 residents after initially contacting 80. If a resident was not home when I initially delivered surveys, I would return up to three times and attempt to speak with the homeowner. All of the surveys contained a letter of invitation explaining my study, an informed consent form detailing how I intended to protect their privacy and the confidentiality of the study and the survey itself. The letter of invitation also explained
that I would return in two days to collect the survey, a comment I verbally stated to every resident who was home. If a resident was not home two days later, or the survey was not left outside for me to collect, I would make up to three return visits to pick up the survey. A few residents emailed myself or my research supervisor regarding survey pick-up, one resident emailed me a completed scanned copy of the survey and two residents mailed their surveys to me at Brock University.

Of the surveys that were completed, twenty-three were from Pallek Estates, ten were from Shaw’s Lane and six were from Carriage Court Estates. I received no completed surveys from The Village; unfortunately, only three residents in that subdivision were home when I attempted to distribute surveys and all declined the opportunity to participate. The Village is a unique community as it is based on New Urbanist ideals and is marketed to upper-class households. Given these characteristics, it is likely that The Village acts as a bedroom community or as second homes to many of its residents, hence my inability to contact many residents. As such, no surveys were collected from this community and all of the data gained from resident surveys are based upon the three other communities. The average rate of completion, excluding The Village neighbourhood, was 39%. A summary of the survey distribution results can be found in Table 2.

<table>
<thead>
<tr>
<th>Neighbourhood</th>
<th>Total Households Contacted</th>
<th>Accepted Survey</th>
<th>Returned Survey</th>
<th>Completion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carriage Court Estates</td>
<td>26</td>
<td>6</td>
<td>6</td>
<td>23%</td>
</tr>
<tr>
<td>Pallek Estates</td>
<td>39</td>
<td>27</td>
<td>23</td>
<td>59%</td>
</tr>
<tr>
<td>Shaw’s Lane</td>
<td>28</td>
<td>10</td>
<td>10</td>
<td>36%</td>
</tr>
<tr>
<td>The Village</td>
<td>22</td>
<td>0</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>
Residents who completed the survey responded to questions related to how they are impacted by nearby agricultural activities. The questions were grouped into three main categories: how they are impacted; if they believe certain farm activities should be permitted or restricted; and, finally, what solutions or recommendations should be followed in order to mitigate these issues. Lastly, the surveys concluded with basic demographic questions to aid in data coding. The survey used a likert scale comprised of “strongly agree”, “agree”, “neutral”, “disagree”, “strongly disagree” and “unsure” to gauge how strong a resident’s opinion was. In addition, below each group of questions residents were given the opportunity to provide additional comments if they so desired.

The goal of the resident surveys was to understand how residents are impacted by adjacent agricultural activities and what solutions exist to moderate these impacts. As well, the surveys served as a means of measuring how accurate the media accounts of residents’ perspectives were, through analysis and comparison.

Farmer Survey Sampling and Process

Farmer sampling was conducted over three months, beginning in February 2012. Initially, using Niagara Navigator and driving around the town, I attempted to determine the addresses of each farm. Using the Clerks’ address records, I tried to match addresses with farmers to determine which individual farmed each parcel of land. Given that many farms in Niagara-on-the-Lake are rented out to other farmers, I was hoping to determine land ownership versus rentals so that the active farmer was contacted instead of the landowner. This process was further complicated due to the presence of retirement lots and the ownership of multiple farms by an individual farmer. Retirement lots were initially intended to give the farmer a place to build a home adjacent to their farm for
future retirement. In reality, many of these lots were sold and the individual residing in the home is not the farmer or a member of the farmer’s family. As such, it was difficult, and at times impossible, to determine where surveys should be delivered.

Upon discovering the impossibility of identifying the residence associated with each farm parcel, this method was abandoned. Instead, over the months of March and April I drove around Niagara-on-the-Lake and left surveys in every mailbox that had an Ontario Federation of Agriculture (OFA) or Christian Farmers Federation of Ontario (CFFO) sign. These signs were a clear indication that the individual residing in the home was an active farmer in Niagara-on-the-Lake. Each survey contained a letter of invitation detailing the research study, an informed consent form explaining their participation and the confidentiality of the study and a copy of the survey. I also attached a label to the front of every envelope requesting farmers to call me when they had completed their survey to arrange for pickup. A total of 68 surveys were distributed and, of those, 16 were completed and picked up, resulting in a 24% response rate. While the response rate among farmers was disappointingly low, it is, unfortunately, not uncommon.²

The goal of farmer surveys was to understand how farmers outside of the urban growth boundary are impacted or influenced by residential development. The survey questions followed four general sections exploring farming activities, land uses and conflicts, policy and solutions and recommendations. The survey concluded with general demographic questions to aid in data analysis. This survey also used a likert scale comprised of “strongly agree”, “agree”, “neutral”, “disagree”, “strongly disagree” and

² Similar response rates have been recorded by Ramsey and Smit, 2002; Sullivan et al., 2004 and Neumann et al., 2007 and thus acknowle that low response rates among farmers is common.
“unsure” to gauge the strength of a farmer’s opinion. In addition, below each group of questions farmers were given the opportunity to provide additional comments if they so desired. As residential development in Niagara-on-the-Lake is steadily increasing and the influx of new residents significantly changes the traditional residential base of the town from farmers to exurbanites, it is important to understand how peripheral farmers understand development conflicts. The majority of farmers in Niagara-on-the-Lake are outside the urban growth boundary, but decisions limiting agricultural activity initiated by residents within the boundary will also impact peripheral farmers. As such, it is important to understand their opinion on the conflict, farming activities and what possible solutions exist to mediate these issues.

The Researcher’s Positionality

My positionality within this research greatly shaped how my data were collected and how my participants were approached. I have spent the majority of my life in Niagara-on-the-Lake, living in what is commonly referred to as “the country”, given its separation from the urban growth boundary and prevalence of agriculture. My home is a retirement lot that was once attached to the adjacent fruit farm. The farm is still owned by a family member and is actively used for tender fruit growing, thus allowing myself to identify as both a resident and a member of a farm family. Given my history and attachment to Niagara-on-the-Lake I am intimately aware of the transformation occurring to the landscape and transition from a farming community to a retirement destination. When conducting my interviews with farmers I often reassured them that I came from a farming family and, as such, was trustworthy. Conversely, when encouraging residents to complete my surveys I aligned myself with them, often stating that, as a resident of
Niagara-on-the-Lake, land use transformation is a topic I know personally and about which I would like their input. Lastly, when talking with public figures I found myself identifying most as a scholar, as my position of power seemed to have been reduced when dealing with such educated figures of authority. As Mullings (1999) has noted, in sharing these characteristics with my participants, it was impossible for me to be considered an outsider. This insider perspective has shaped my research and interactions with my participants, resulting in knowledge that must be recognized as partial, due to my positionality (Rose, 1997). Conversely, when discussing my findings, my training has allowed me to detach from the insider roles I assumed while collecting data in order to present a balanced thesis.

**Challenges**

Finally, I encountered a number of challenges throughout my data collection that significantly impacted my methodology. To begin, my positionality as a member of a farm family seemingly had a negative and unforeseen impact on the rates of participation from the farm community. Each farmer who either sat down for an interview or completed a survey asked who my father was. The last name Epp, coincidentally, is synonymous in Niagara-on-the-Lake with Epp Family Farms, the largest farm operation within the community, which is also owned by a family to which I am not related. As a result, many farmers feared that their personal opinions would be shared with the patriarch of Epp Family Farms. While I am ethically bound to keep all responses confidential, there seemed to be a level of distrust of me and my research amongst the

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3 Feminist scholars have argued the importance of recognizing ones positionality and partiality within their research and the necessity to include this within the discussion of methodology (see, for example: McDowell, 1992; England, 1994; Pratt and Hanson, 1995; Rose, 1997).
farming community. I can therefore infer that the lower than anticipated response rates from the surveys and complete disregard for my invitations to participate in interviews can be at least partially attributed to this circumstance.

Secondly, distrust of academics was also a facet I encountered when speaking with farmers regarding my surveys. A few farmers who called to ask for more information before completing their surveys were hesitant to provide a written opinion regarding political issues that are sensitive amongst the farming community. This can be attributed to two main reasons. The first is a sense of distrust found amongst many farmers regarding political institutions. Two farmers in particular stated that they were convinced by their spouses not to complete my survey after initially having agreed to do so. Their reasoning was that they feared retribution of some sort from government agencies who might have access to my data. One farmer and his spouse feared that completing a survey critical of government policies could have potentially catastrophic repercussions for them personally. While this fear was largely unfounded, it was echoed by one other farmer and, thus, may have been a major reason why other older farmers within the community refused to participate.

The second reason is more substantial and relates directly to academic research. One farmer, before completing the survey, insisted on knowing whether my research would favour farmers or residents. After informing this farmer that my research would remain neutral, he informed me of another graduate student who had recently completed a similar study. The researcher convinced a large number of farmers to complete a survey exploring their opinions about the use of offshore labour. When the study was completed, the findings demonized farmers and how they treated their staff. As a result
of that study and the farmer’s belief that it was an unfair and inaccurate portrayal of the agricultural industry, many farmers from Niagara-on-the-Lake are untrusting of individuals conducting academic research. While I was unaware that such a negative study took place and only one farmer made me aware of this study, I can deduce with much certainty that this sentiment was likely shared by many of the farmers who did not complete my survey.

Lastly, Niagara-on-the-Lake is a community with a large Mennonite and Mexican Mennonite population, exemplified by the plethora of churches found within the town. Mennonites are a religiously based population who predominantly, due to immigration from Europe, South America and the United States, congregated in rural locales across much of Canada (Reghr, 1983). As they traditionally maintain agrarian-based lifestyles (Redekop, 1986), their presence within Niagara-on-the-Lake is understandable. Difficulties with my research arose, however, as Mennonites are a relatively private community with what Hall and Kulig (2004) have observed to be general unwillingness to work with outsiders. This resistance is complicated by the fact that many Mennonites converse mainly in Plautdietsch, a German dialect (Hedges, 1996) and one that I do not speak. Hall and Kulig (2004) have documented the complications associated with conducting a cross-cultural research study with Mennonites and the necessity of using research assistants who are members of the community and speak the same languages. My inability to speak Plautdietsch and my outsider status can further explain my low response rates within this Mennonite Community.
Conclusion

While my data collection process was hampered by a variety of challenges, I was still able to collect a breadth of data from a variety of stakeholders. I acknowledge that while not generalizable, the data collected provide an in-depth understanding regarding the challenges associated with competing land uses and the conflicts that arise. The validity of this research can be found following the success of Smithers et al. (2004) employment of multiple research methods and the benefits associated with the depth and breadth of information gleamed from using a variety of diverse methods. In addition, validity can also be gained through the inclusive nature of the study and the effort to incorporate such a large group of participants. Finally, the use of multiple research methods provides a unique form of research that is rarely utilized in rural geography, thus strengthening the importance of my research vis-à-vis existing research.
Chapter 4
The Impacts of Agricultural Land Uses on Non-Farm Residents

Issues regarding land use conflicts have, at times, consumed Niagara-on-the-Lake, dominating both council discussions and many issues of the community’s newspaper, The Niagara Advance. This conflict is largely based upon farming activities taking place in close proximity or, in many instances, adjacent to residential development. To understand the implications of this conflict, I sought feedback from residents and farmers regarding how each group have been impacted by the adjacent land uses. The purpose of this chapter then, is to explore how residents have been impacted by adjacent agricultural land uses. It will be organized into four general sections: demographic information and residents’ motivations for moving to Niagara-on-the-Lake; their opinions of farming activities and subsequent impacts; their preferences regarding farming activities; and lastly, the role they believe council should have in regards to land use conflicts. Subsequently, Chapter Five will detail how farmers are impacted by adjacent residential developments.

This chapter begins by briefly presenting demographic information regarding the survey respondents and their primary reasons for moving to Niagara-on-the-Lake. Presenting their reasons for living in Niagara-on-the-Lake will help to establish the level of importance they placed upon agriculture within the community in regards to other determinants of quality-of-life. The second section will analyse their level of acceptance of specific farm activities occurring in close proximity to their homes and extent to which they support these practices. This section will conclude with an exploration of how adjacent agricultural land uses impact residents’ daily lives. This analysis is useful in understanding the crux of the conflict between residential and agricultural land uses, as
The perceived impacts of agricultural activities on a resident’s daily life is viewed negatively.

The third section of this chapter moves beyond the impacts of agricultural activities and explores resident preferences regarding acceptable agricultural practices. It will assess what activities residents find acceptable, as well as when and where they believe certain activities should take place. Understanding the residents’ preferences regarding agricultural activities is necessary, as their preferences guide the level of tolerance expressed towards agriculture within the Town. When agricultural activities do not meet a resident’s preference, conflicts often emerge, as residents believe their quality-of-life is being affected.

The final section will examine the role residents believe town council should have in regards to this conflict. As the town council is responsible for enacting by-laws, such as the noise by-law, residents often believe that stricter regulations limiting or prohibiting certain farming activities are necessary. Understanding the role residents believe council should take, or the by-laws they want council to pass, provides insight into how this conflict can be resolved through local planning. This section will also help to set up chapter six, which will explore lessons gleamed from this conflict and recommendations that should be considered before new residential developments are constructed adjacent to agricultural land.

Data presented in this chapter were primarily collected through the surveys distributed throughout the neighbourhoods of Pallek Estates, Carriage Court Estates and Shaw’s Lane. Supplementary data was also obtained through letters to the editor and articles found within *The Niagara Advance*, which largely detail the perceived impacts of
agricultural activities on local residents. The use of articles from *The Niagara Advance* helped to chronicle the history of this conflict and substantiate similar responses recorded in the surveys.

**Demographic Characteristics**

To begin, residents completing the surveys were demographically diverse, with age ranges between twenty-five years and over seventy-five years of age. As depicted in Figure 4, the majority of respondents were over the age of forty-five; however, when analyzed at a neighbourhood level, Figure 5 portrays the youngest proportion of respondents as being from Pallek Estates and the oldest group of respondents from Shaw’s Lane. While the majority of respondents worked full-time, it was evident from Figure 6 that residents in both Carriage Court Estates and Shaw’s Lane were more likely to work part-time or be retired. Lastly, when analyzing at a neighbourhood
level, it was evident that the number of individuals per household was largely diverse. As depicted in Figure 7, residents in Pallek Estates were more likely to have three or more individuals per household, while the communities of Carriage Court Estates and Shaw’s Lane were more likely to have two or fewer individuals per household.

![Employment Status](image1)

**Figure 6 - Employment status of resident respondents by neighbourhood**

![Number of Residents per Household](image2)

**Figure 7 - Number of residents per household by neighbourhood**

When examining these data collectively, it can be inferred that the Pallek Estate neighbourhood is predominantly a family neighbourhood with younger residents, larger
households and a greater proportion of actively employed individuals. Conversely, Shaw’s Lane can be considered a more mature neighbourhood with residents who are older and have fewer people per household who are not actively employed. As such, while Pallek Estates is a family community, Shaw’s Lane can be considered a retirement neighbourhood. Carriage Court Estates, comparatively, is more complex given the diversity in respondents. Additionally, due to the relatively low number of responses from this neighbourhood, a label of retirement or family oriented it is not practical.

Quality-of-Life

As a community, Niagara-on-the-Lake often boasts about its idyllic setting, natural landscape and cultural facets, such as wine, art and theatres. Considering these features of the community, it is important to understand why residents are moving to the town and what importance they place upon agriculture. Given the conflicts related to agricultural and residential land uses, it is imperative to understand how valued agriculture is to these residents, as this may shape their level of tolerance regarding agricultural activities. As such, respondents were asked to rate the level of importance regarding a variety of aspects related to quality-of-life. These aspects and corresponding responses are summarized in Table 3, with Table 4 providing a neighbourhood breakdown of these responses.

Table 3 - Importance of various aspects of Niagara-on-the-Lake in regards to their contribution to residents’ quality-of-life

<table>
<thead>
<tr>
<th></th>
<th>Very Important</th>
<th>Somewhat Important</th>
<th>Neither Important nor Unimportant</th>
<th>Somewhat Unimportant</th>
<th>Very Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Landscape</td>
<td>29</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agricultural Landscape</td>
<td>20</td>
<td>17</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Size of Community</td>
<td>24</td>
<td>13</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rural Character</td>
<td>24</td>
<td>13</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Peace and Tranquillity</td>
<td>28</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Of the five aspects provided to respondents, the natural landscape and peace and tranquillity received the strongest level of importance regarding a resident’s quality-of-life. Niagara-on-the-Lake’s natural landscape is comprised of both greenery and water features, including Lake Ontario, the Niagara River, Niagara Escarpment and a variety of protected conservation areas providing residents with easy access to nature. Niagara-on-the-Lake is commonly referred to as “The Prettiest Town in Canada”, a moniker that is fulfilled, in part, by the lush natural landscape. The importance of peace and tranquillity is not entirely surprising given that the majority of respondents, totalling 92%, migrated from urban areas, mainly Toronto, Mississauga, Burlington, Hamilton, Niagara Falls and St. Catharines, to Niagara-on-the-Lake. Rural areas are often viewed as calmer than their urban counterparts and, given the migratory trends of the respondents, the importance attended to peace and tranquillity is reasonable. Many residents echoed this sentiment and stated that the quiet atmosphere was their primary reason for moving to Niagara-on-the-Lake.

Table 4 - Importance of various aspects of Niagara-on-the-Lake in regards to their contribution to residents’ quality-of-life by neighbourhood

<table>
<thead>
<tr>
<th></th>
<th>Pallek Estates</th>
<th>Carriage Court Estates</th>
<th>Shaw’s Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Important</td>
<td>Somewhat Important</td>
<td>Neither Important nor Unimportant</td>
</tr>
<tr>
<td>Natural Landscape</td>
<td>14 9</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agricultural Landscape</td>
<td>10 12 1</td>
<td>4 1</td>
<td>1</td>
</tr>
<tr>
<td>Size of Community</td>
<td>13 8 2</td>
<td>3 3</td>
<td>-</td>
</tr>
<tr>
<td>Rural Character</td>
<td>13 9 1</td>
<td>4 2</td>
<td>-</td>
</tr>
<tr>
<td>Peace and Tranquility</td>
<td>16 7 -</td>
<td>5 1</td>
<td>-</td>
</tr>
</tbody>
</table>

Residents’ motivations for moving to Niagara-on-the-Lake may be guided by the discourse created by both the developers of these communities and real estate agents who market these homes. For example, the developers of Pallek Estates boast “charm and
quaintness unlike any other community” as well as the proximity to “world famous wineries” (Mountainview Homes, 2012). Real estate agents, alternately, promote homes in Pallek Estates as being a part of “beautiful wine country,” “tranquil country living” and located in the “quiet village of Virgil”. Real estate agents similarly market Carriage Court Estates as an ideal home for “small town living”, while the developer of Shaw’s Lane promotes the leisure and cultural amenities Niagara-on-the-Lake offers (Grey Forest Homes, 2012). Not surprisingly, the marketing discourse associated with these communities greatly mirrors residents’ motivations for moving to Niagara-on-the-Lake.

The next two aspects that were of greatest importance to residents were size of community and rural character. As the size of a community can impact a town’s rural character, the identical response in both categories is understandable. These two aspects were less important than the natural landscape and peace and tranquillity; however, they were only marginally less significant. The importance of this aspect was also evident in many respondents’ primary motivation for moving to Niagara-on-the-Lake; the desire to be part of a small community and the rural character offered in Niagara-on-the-Lake were consistently offered as additional reasons by respondents.

Finally, the aspect that can be considered the least important due to resident responses was the agricultural landscape. Given the history of conflict between residents and farmers, the fact that agriculture scored the lowest in terms of importance is not surprising. Since residents appear to favour peace and tranquillity, the noise generated in an agricultural landscape would directly conflict with their desire for a quieter atmosphere. In addition, as peace and tranquillity was ranked as the most important aspect in the Pallek Estates community, it is not surprising that the agricultural landscape
was ranked as the least important aspect contributing to quality-of-life. At a lesser scale, these trends were also evident in Shaw’s Lane and Carriage Court Estates, where the agricultural landscape was ranked the least important aspect and second least important aspect, respectively.

The low level of importance attributed to the agricultural landscape in all three communities helps to provide a background regarding the conflict between agricultural and residential land uses in Niagara-on-the-Lake. As residents appear to have placed a low level of importance on the agricultural landscape, they may be less willing to tolerate the agricultural activities that take place adjacent to their property. Conversely, in Shaw’s Lane, where the natural landscape was considered the most important aspect, residents provided strong opinions regarding the recent removal of a stand of evergreen trees adjacent to their property. Many of the residents lamented that the Town needed to protect the trees and natural environment, with one resident stating “NOTL desperately needs a tree policy… new developments clear-cut sites!! This is detrimental to the environment and health of the residents.” In contrast, a resident from Carriage Court Estates was the only individual to comment on the importance of agriculture saying, “This is a beautiful place to live, but it is rich with many working farms and we have to respect that first and foremost!” As the natural landscape was given such a high level of importance, it is clear that residents are outspoken regarding issues they perceive to negatively impact this landscape. Conversely, the agricultural landscape was deemed the least important aspect in regards to quality-of-life and, as such, was not given the same consideration from residents.
Providing an analysis in regards to the demographic characteristics of each neighbourhood and residents’ motivations for moving to Niagara-on-the-Lake will prove beneficial when analyzing the findings below. Understanding how residents are impacted and their perspectives regarding acceptable farm activities will be better qualified with a basic understanding of each neighbourhood’s characteristics and the relative importance placed upon the agricultural landscape.

**Farming Activities**

Farming activities in Niagara-on-the-Lake are varied due to the diversity of agricultural forms undertaken within the community. As such, the acceptance of such activities by residents and the degree to which they are impacted is also quite variable. In the past, the use of bird bangers and wind machines were viewed as unacceptable and were understood as having a negative impact on residents’ quality-of-life. Determining if residents still believe noise-generating farm activities are a nuisance is an important indication of how farm practices impact a residents quality-of-life and may influence their level of acceptability of other farm practices. This section will begin with a brief overview of the conflict regarding the most contentious issue, wind machines, before presenting the findings from the surveys.

An excellent example of the ways in which agricultural activities have come into conflict with residents is in regards to wind machines. Known professionally as anti-frost machines they were first used in Niagara-on-the-Lake in 2003 at a winery in the rural countryside. These machines, as depicted in Figure 8, are designed to protect crops from extreme cold temperatures in the winter and frost in the spring and fall. Running on a diesel engine, the machines turn propellers situated 15 metres above the ground,
generating air movement and bringing warmer air from above, down to the vineyard surface. Considered a crop saving mechanism, these machines began growing in popularity and spread across the agricultural landscape. In the fall of 2004, Stratus Winery, located in close proximity to The Village, utilized this technology. Complaints regarding the wind machines were rampant, and were documented at the winery, Town hall and in *The Niagara Advance*. Residents complained of being kept awake by the sound similar to “half a dozen hovering helicopters about a half block away” (Coles, 2004, 2), with some wondering how such a device would impact tourism and the attractiveness of the community to potential residents (Paradis, 2004). During this time, it should be noted that more than 70 wind machines were already in use in Niagara-on-the-Lake when Stratus Winery elected to install this equipment. Furthermore, this debate was not one-sided, as many residents wrote to *The Niagara Advance* in support of wind machines and agriculture, with one resident stating “I would rather be surrounded by quiet vineyards and orchards than by intrusive development and if it takes bird bangers and the odd noise from the wind machines, so be it” (Luba, 2004, 4).

![Figure 8 - Wind machine in a vineyard adjacent to Carriage Court Estates](image)
The complaints regarding Stratus Winery escalated, requiring the winery to seek alternatives to the wind machines or solutions that would quiet the noise in order to appease the community (Marotta, 2004). Adjacent residents, however, were not comforted by this measure and took their concerns to the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) in the hopes that the use of wind machines would be deemed an abnormal farm practice by the Normal Farm Practices Protection Board (NFPPB) (Coles, 2005a). Before the complaint could be reviewed, however, an agreement was reached between the complainants and Stratus Winery, as the winery agreed to test new, quieter machines and participate in a three year study regarding best environmental management practices for wind machines (Coles, 2005b). While the complaints regarding wind machines have not been as prominent an issue in the local newspaper in recent years, they continue to be a noise-generating farm activity that dominates much of the viticultural landscape.

**Acceptable Farm Activities**

Given the controversy generated in the past by the introduction of wind machines, the survey distributed to residents sought both an update regarding their opinion on wind machines and to gauge the level of acceptability for a variety of farm activities. As summarized in Table 5, residents were asked the extent to which they agreed or disagreed that certain farm practices were acceptable. The responses garnered were quite varied; however, general acceptance of most farm activities was recorded. The following section will provide a more detailed analysis of these findings.
Table 5 - Level of agreement regarding the acceptability of farm practices

<table>
<thead>
<tr>
<th>Activity</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of bird bangers is an acceptable farm practice</td>
<td>5</td>
<td>24</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>The use of wind machines is an acceptable farm practice</td>
<td>6</td>
<td>20</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Farm tractor and/or truck noise is a nuisance</td>
<td>1</td>
<td>6</td>
<td>11</td>
<td>14</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>The use of spray fertilizer and/or pesticides is an acceptable farm practice</td>
<td>1</td>
<td>9</td>
<td>6</td>
<td>12</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Spreading of manure as fertilizer is an acceptable farm practice</td>
<td>10</td>
<td>25</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>The conducting of farming activities during the evening and/or on weekends is an acceptable farm practice</td>
<td>7</td>
<td>22</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>-</td>
</tr>
</tbody>
</table>

Bird bangers, pieces of equipment that emit a gunshot noise to scare birds, and wind machines received comparatively similar responses from residents. The majority of respondents, 74 percent in regards to bird bangers and 67 percent in the case of wind machines, agreed or strongly agreed that these activities are an acceptable farm practice. Given the history of conflict regarding wind machines within the community, it is surprising to see such a strong level of acceptance. When analyzing these responses at a neighbourhood level, Pallek Estates had a greater level of support for these activities than Shaw’s Lane. Interestingly, wind machines and bird bangers are less common near Shaw’s Lane, as the predominant form of agriculture is tender fruit growing, whereas adjacent to Pallek Estates, vineyards abound. This is an important detail, as tender fruit farmers typically do not utilize wind machines or bird bangers. As such, it was unexpected that the level of support for these activities is lowest in the neighbourhood that is least likely to be impacted by them. Alternately, the greater level of support for these activities in Pallek Estates can be related to the fact that these activities are not as ubiquitous in this community as Shaw’s Lane and as such, the residents of Pallek Estates
have grown accustomed to their presence. Regardless, the high level of support for these practices implies that the conflict regarding wind machines, in particular, has been largely resolved within the community.

Farming activities that generate noise go beyond bird bangers and wind machines, as tractor and truck noise can also be considered a nuisance to nearby residents. Respondents, however, did not consider this activity to be an irritation, as the majority of residents were either neutral or disagreed to some extent with this statement. It appears that the majority of respondents deemed noise-generating farm activities as acceptable, a finding that is promising for the agricultural community, as these practices have been considered a nuisance in the past.

In comparison, a strong level of support was not evident in regards to the use of spray fertilizers and/or pesticides, as 54 percent of respondents disagreed or strongly disagreed. Respondents provided strong statements regarding the use of pesticides and their fears concerning the safety of such an activity. One resident from Pallek Estates stated, “pesticide use in very CLOSE proximity to my home is a MAJOR concern. We need clear communication as to what is being used and valid information about health concerns.” In addition, another resident of Pallek Estates felt that farmers should provide residents with notice before spraying is to commence. Perhaps, if notice were given residents would be more likely to accept spray fertilizers and/or pesticides as a normal farm practice, as they are prepared for this activity. In contrast, the spreading of manure as fertilizer was overwhelmingly considered a normal farm practice, with 90 percent of residents agreeing or strongly agreeing with this statement. This response is interesting, as the spreading of manure generates dust and a strong, offensive odour that lingers
significantly longer in the air than fertilizers or pesticides. This level of support can, however, be justified when considering that manure is an organic fertilizer that does not contain harsh chemicals, thus potentially garnering greater support of its use.

Finally, residents were asked to consider the acceptability of farming activities during the evening and/or on weekends. This question was important, as the wind machines only operate at night and general farming activities do not cease in the evenings or on weekends. Residents strongly supported this statement with 74 percent of respondents agreeing or strongly agreeing. This support was reiterated with resident comments, with one respondent in particular from Pallek Estates stating, “a farmers business hours are not 9-5, they have to work evenings or weekends and that is fine with us.” Accepting that some farm practices cannot occur during normal business hours is a necessity when residential development encroaches on agricultural landscapes as farming often occurs during traditional periods of rest.

With the exception of spray fertilizer and/or pesticides, it appears that the residents of Pallek Estates, Carriage Court Estates and Shaw’s Lane consider farming activities in Niagara-on-the-Lake to be acceptable. General support of farming was quite common in this section, and as provided in Figure 9, it is clear that respondents from Shaw’s Lane are generally unencumbered by the externalities of farming activities. This level of support, as documented by respondents, is imperative to reducing the occurrence of conflicts between adjacent land uses. While residents acknowledge their acceptance of these farming activities, the following section will determine if they are impacted by these farming activities.
We are a farming community and should realize the impact development has on reducing the farms.
The farmland and residential areas are coming too close to each other. Farmers are selling acreage to developers.
Agriculture comes first always in NOTL. It has precedence and any new resident must accept that.
Keep it up – better than more subdivisions.
The farmers were here first and are critical to the sustainability of NOTL.

Figure 9 - Responses from Shaw's Lane regarding agricultural activities in Niagara-on-the-Lake

Impacts of Farming

When moving to a predominantly agricultural community, new residents may not understand the nature or necessity of many farming activities. It is important to understand how adjacent residents are impacted, so that the potential conflicts are reduced or averted. The following section will explore how residents were impacted by nearby agricultural activities, before moving to the third section of this chapter, which explores resident preferences regarding agricultural activities. The data for this section are summarized in Table 6 and generally provides similar response rates as Table 5.

Table 6 - Level of agreement regarding the impact of farming activities on residents' daily life

<table>
<thead>
<tr>
<th>Activity</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of bird bangers does not impact me</td>
<td>7</td>
<td>16</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>The use of wind machines at night does not impact me</td>
<td>6</td>
<td>14</td>
<td>11</td>
<td>4</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>The spread of mud from the farm to the road is not a concern</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Spray fertilizer and/or pesticides do not limit my use of the outdoors</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>12</td>
<td>13</td>
<td>-</td>
</tr>
<tr>
<td>The spreading of manure over orchards as fertilizer does not limit my use of the outdoors</td>
<td>9</td>
<td>19</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Tractor and/or truck noise does not impact me</td>
<td>9</td>
<td>15</td>
<td>10</td>
<td>4</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

The only question in this section to receive high levels of disagreement from residents is in regards to the impact of spray fertilizer and/or pesticides. For this question, 64 percent of respondents felt spray fertilizer and/or pesticides impacted their
use of the outdoors. Given that the majority of respondents did not consider spray fertilizer and/or pesticides to be an acceptable farm practice, the proportion of residents who feel impacted is understandable. The perceived health impacts associated with chemical fertilizers and/or pesticides greatly swayed residents’ opinions. As depicted in Figure 10, residents from Pallek Estates and Carriage Court Estates had the strongest level of disagreement regarding the impacts of spray fertilizer and/or pesticides. In fact, residents from Pallek Estates also provided the strongest commentary regarding the impacts of pesticides. Their responses are provided in Figure 11 and give an impression that, as Pallek Estates is a more family-oriented community, their sense of impact is based upon a need to protect their children. This impact can be linked to existing research that has explored the potential health threats associated with fertilizers and pesticides and the popularity of the organic movement that has made organic produce widely available to the general populace. In fact, the organic movement has slowly spread throughout the farming community as a small proportion of vineyards are now organic and some wineries produce and sell organic wine. The accessibility of such research and the availability of organic produce may have influenced the negative response regarding the perceived impacts of pesticides and/or fertilizers. Additionally, the fears associated with the potential health impacts of spraying fertilizers and/or pesticides can also be linked to the appearance of the person applying the spray. In most

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4 Recent research has found that there is no conclusive evidence supporting the claim that organic food has more health benefits than conventionally produced food. An in depth study by Smith-Spangler et al. (2012) analyzed more than 230 academic papers and concluded that organic food does not provide fewer health risks than food produced using pesticides and fertilizers and that organic produce may still contain traces of such chemicals.
instances, the individual applying the spray is either operating a tractor with an enclosed and fully ventilated cabin or is wearing personal protective equipment that includes some sort of respirator and waterproof coveralls and coat. This visual ultimately stokes the fears associated with spray pesticides and/or fertilizers while seemingly justifying their argument.

![Spray Fertilizer and/or Pesticides do not Limit my use of the Outdoors](image)

**Figure 10 - Level of agreement regarding the impact of spray fertilizer and/or pesticides per neighbourhood**

- Close windows when spraying occurs, limit amount of activities outside
- We are sensitive to knowing what pesticides are sprayed for the overall health concern of our children
- I would prefer the farmers to find alternative ways to combat insects then using pesticides – not good for us to be breathing it in (especially my kids)
- I would like to know when farmers in my immediate area spray pesticides so I can protect my family

**Figure 11 - Resident statements from Pallek Estates regarding the impacts of pesticides**

The second category to receive a more varied response was in regards to the spread of mud from the farm to the roadway. While the majority of respondents agreed or strongly agreed that this was not a concern, the level of agreement or disagreement was highly influenced by the number of neutral responses. It can be deduced, therefore, that while the spread of mud from the farm to the roadway does occur, it does not
significantly impact residents of these three communities. Comparatively, when discussing the spreading of manure as a fertilizer, a high proportion of respondents were also neutral to the impacts of this activity. This neutrality and the considerably low number of respondents in disagreement with this statement implies that residents were generally not impacted or by this activity. As this can be considered a “greener” form of fertilizer, the low impact rates reported is understandable.

In regards to noise-generating activities, the three remaining categories resulted in a slightly lower level of neutrality, with the exception of wind machines garnering a higher number of neutral responses. Overall, response rates reflect that the majority of farm activities occurring in close proximity to their homes did not impact them. In particular, the use of bird bangers and wind machines impacted only 26 percent and 21 percent of respondents, respectively. Furthermore, only 13 percent of respondents were impacted by truck and/or tractor noise, leading to the understanding that noise-generating activities do not greatly impact adjacent residents. The low level of impact experienced by these activities can be attributed to residents’ acceptance that these practices are a necessity. This sentiment is reiterated by a resident in Carriage Court Estates who stated, “while I reside within close proximity to wind machines and where trucks and tractors are used actively, I accept these activities as being essential to the success of the adjacent farmland.” Such comments were also common in Shaw’s Lane, with one resident stating, “if I want to eat their food, I need to accept their activities – these are not a concern to me” while another echoed that, “agriculture came first and is first in this NOTL area. No housing should interrupt the requirements of agriculture.”
The low levels of impact associated with a variety of farming activities portray an acceptance of agricultural practices amongst nearby residents. These low levels of impact are not, however, consistent when understanding the impacts associated with spray fertilizer and/or pesticides. While the family oriented community of Pallek Estates had a much stronger reaction to these chemicals, it is clear that the history of conflict associated with noise generating activities has diminished. It appears that while residents understand the necessity of certain farm activities, they continue to be impacted by spray fertilizer and/or pesticides, altering the nature of the conflict between agricultural and residential land uses. Moving beyond this, the fourth section of this chapter will detail residents’ preferences in regards to agricultural activities occurring on adjacent land.

Resident Preferences for Farming

While it is evident that many of the respondents from Pallek Estates, Carriage Court Estates and Shaw’s Lane accept and are not significantly impacted by the majority of farming activities included in the surveys, it is still important to understand their preferences regarding agricultural practices. Resident preferences influence their tolerance of farming activities and can help foretell when conflict is likely to arise. This section will explore resident preferences related to agricultural practices, specifically detailing preferences related to noise-generating activities and the spraying of fertilizers and/or pesticides and the times at which such activities occur.

Historically, complaints related to agriculture within Niagara-on-the-Lake were related to noise-generating activities that took place during the evening hours. As such, residents were asked a variety of questions related to noise-generating activities and when they should occur. As seen in Table 7, resident responses regarding these activities and
the time they occur were quite diverse. The strongest response was in regards to prohibiting wind machines at night, as 56 percent of respondents disagreed or strongly disagreed with this statement. Their disagreement was based upon an understanding that wind machines only run at night and do so to protect the crops from extreme weather. This understanding was evident in the comments provided by residents and is clearly stated by one resident from Pallek Estates: “Temperatures drop at night therefore that is the time when the wind machines are needed most.” When asked, however, whether they agreed that wind machines should not be located near residential dwellings, 51 percent of respondents agreed or strongly agreed with this question. It can be inferred, therefore, that while residents understand why wind machines are needed and when they need to run, they would prefer wind machines not be located near their homes. These preferences and understandings regarding wind machines are important, as they prove that while the majority of residents would prefer not to live near this equipment, they understand its purpose and appear tolerant of its use.

<table>
<thead>
<tr>
<th>Test</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird bangers should not be used near residential dwellings</td>
<td>8</td>
<td>12</td>
<td>6</td>
<td>9</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Wind machines should not be used at night</td>
<td>6</td>
<td>4</td>
<td>7</td>
<td>17</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Wind machines should not be located near residential dwellings</td>
<td>6</td>
<td>12</td>
<td>8</td>
<td>9</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Noise generating farming activities should be prohibited at night</td>
<td>7</td>
<td>9</td>
<td>8</td>
<td>12</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

Responses regarding residents’ preferences related to the spraying of fertilizers and/or pesticides did not, however, garner as favourable a response and are detailed in Table 8. The majority of respondents, 72 percent, either agreed or strongly agreed with the statement that the application of spray fertilizers and/or pesticides should be restricted
to certain times of day and/or week. This preference can be linked to a comment made earlier by a resident from Pallek Estates in Figure 9, requesting notification of when spraying is to occur. Perhaps if residents were notified in advance, given the impossibility of restricting the occurrence of the activity, residents would be more tolerant of this activity. Additionally, 79 percent of respondents agreed or strongly agreed that the application of fertilizers and/or pesticides should not occur in close proximity to residential dwellings. Given that many of the residents in all three communities have homes that are directly adjacent to active farmland, restricting such an activity near residential land would appear to be impractical.

<table>
<thead>
<tr>
<th>Table 8 - Resident preferences regarding restrictions to the spraying of fertilizers and/or pesticides</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of spray fertilizers and/or pesticides should only be conducted at certain times of the day and/or week</td>
<td>11</td>
<td>17</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>The use of spray fertilizers and/or pesticides should not be conducted in close proximity to residential dwellings</td>
<td>18</td>
<td>13</td>
<td>7</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Residents were also asked more generally about their preference regarding farming activities taking place in the evenings and on weekends. As summarized in Table 9, the majority of residents disagreed or strongly disagreed with the statements that farming activities should not occur in the evening or on the weekend. Strong comments from residents were also provided acknowledging the work schedule of farmers, in particular, one resident from Pallek Estates stated, “farming occurs during seasons, not weekends or evenings. Farming is done when it’s needed, no matter what time it is. Farming was here before residential (who need to adapt).” Similarly, a resident from Carriage Court Estates commented,
…I know that the farmers were here first. Residential areas, such as the one I live in, were orchards. It isn’t right for homes to be built in these areas, then try to shut the farmers down and tell them what they can or cannot do. If we live near a farm/orchard then we should take responsibility for that and not make demands on the farmers to change!

These comments portray an understanding and acceptance of farming activities and a preference to remain in Niagara-on-the-Lake, regardless of the adjacent agriculture. As future development within Niagara-on-the-Lake is bound to take place in close proximity to agriculture land uses, these positive reflections are encouraging.

Table 9 - Resident responses regarding the restriction of agriculture to certain times and days

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>General farming activities should not occur in the evening</td>
<td>3</td>
<td>6</td>
<td>13</td>
<td>13</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>General farming activities should not occur on the weekend</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>23</td>
<td>4</td>
<td>-</td>
</tr>
</tbody>
</table>

Finally, residents were asked if they would prefer not to have farming activities take place in close proximity to their homes. Interestingly, as evident in Table 10, only 18 percent of respondents agreed or strongly agreed with this statement. The majority of respondents disagreed or strongly disagreed with this statement and one third of all respondents were neutral on this topic. Considering the conflicts that have arisen due to the close proximity between agricultural and residential land uses and the lingering disagreement regarding certain farming practices, it is surprising that the majority of residents would prefer to live near agricultural land or are neutral on this topic. The implications of such a preference could mean that residents are overcoming their initial dissatisfaction regarding farming practices and, instead, have accepted this adjacent land use.
<table>
<thead>
<tr>
<th>I would prefer not to have farming activities take place in close proximity to my house</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>5</td>
<td>13</td>
<td>12</td>
<td>7</td>
<td>-</td>
</tr>
</tbody>
</table>

Lastly, the spread of residual mud or other debris to the roadway by farming activities is a common occurrence within these residential communities. This is particularly common due to the parcelization of farmland within the community and the necessity for farm equipment, such as tractors, to travel on public roads in order to reach disjointed tracts of land. As a result, mud or other forms of debris, such as plant matter, are unintentionally spread to nearby roads creating an inconvenience to residents. Considering this, residents were asked whether farmers should be responsible for cleaning such debris from public roadways and highways. As portrayed in Figure 12, the majority of respondents from each neighbourhood agreed, or strongly agreed with the statement. This response was surprising, considering the majority of residents did not consider the spread of mud or debris to the roadways to be a concern, yet they felt farmers should still be required to clean up such debris. As depicted in Figure 13, the spread of mud to roadways is common and can be rather unsightly; however, requiring farmers to clean up such residue would be difficult to coordinate.

Discerning resident preferences is imperative to understanding how conflicts arise between residential and agricultural land uses and how they can be mitigated. The longstanding conflict regarding the use of wind machines no longer appears to be an issue and preferences related to the use of such equipment favour the farmer. It should, however, be noted that preferences regarding the use of fertilizers and/or pesticides have the potential to become a contentious issue given the lack of support of this activity by
residents. The fears associated with the potential health impacts of fertilizers and/or pesticides are rampant, especially within Pallek Estates where young families are the dominant demographic. If such fears are not neutralized, this farming activity could become a major source of conflict within the community.

![Bar chart showing resident responses by neighbourhood regarding the cleaning of residual mud or other debris from roadways.]

**Figure 12 - Resident responses by neighbourhood regarding the cleaning of residual mud or other debris from public roadways**

![Image showing the spread of mud from a farm to a roadway adjacent to Pallek Estates.]

**Figure 13 - Spread of mud from a farm to a roadway adjacent to Pallek Estates**
Resolutions and Resident Recommendations

The final section of this chapter will provide resident generated recommendations regarding conflict related to farming activities near residential developments. It will begin by exploring how residents and farmers can reduce the potential for conflict before analyzing the role respondents believe the Town Council should play. As there are many stakeholders involved in these conflicts, respondents were asked to assign responsibility to each group. Understanding which group residents hold accountable for these conflicts will help guide chapter six, where the lessons gained from this research will be discussed.

Awareness amongst Residents and Farmers

Respondents were asked to comment on whether residents and farmers should become more aware of the land uses adjacent to their property. Summarized in Table 11, making potential new residents aware as to the nature of nearby farm activities garnered the strongest level of agreement. In fact, only five respondents disagreed or strongly disagreed with this statement, while six respondents were neutral. This is quite a significant response, as it implies that informing potential residents of the nature of nearby farming activities would be beneficial and could reduce the potential for conflict. It should be noted that while this question received strong levels of agreement, the remaining two questions regarding a farmer’s responsibility in mitigating these issues also received relatively strong support. In fact, 67 percent of respondents either agreed or strongly agreed that farmers need to be more aware of how farming activities impact nearby residents and 54 percent agreed or strongly agreed that farmers should adjust their practices to reduce the impacts on nearby residents. While fewer residents strongly
agreed to these statements, they still placed a level of responsibility on the farmer to reduce the potential for conflict.

Table 11 - Resident responses regarding roles and responsibility to mitigate or lessen the potential for conflicts

<table>
<thead>
<tr>
<th>Potential new residents should be made aware of the nature of nearby farm activities before they purchase a home in Niagara-on-the-Lake</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strong Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>12</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Farmers need to be more aware of how farming activities impact nearby residents</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strong Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>18</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Farmers should adjust their practices to reduce the impacts on nearby residents</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strong Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>13</td>
<td>9</td>
<td>4</td>
<td>5</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Regardless of the onus residents placed on farmers, all of the farming activities discussed in the survey are considered normal farm practices by OMAFRA, and would be typical in similar agricultural regions throughout Canada. Furthermore, the *Farming and Food Production Protection Act* (FFPPA), commonly referred to as the “Right to Farm Act” ensures, through legislation, that farmers have the right to conduct these activities in Ontario (Fraser, 2005). As such, expecting farmers to adjust their activities would be unrealistic and potentially against the law, in many instances. It appears, however, that while residents had a level agreement regarding the role of farmers in these conflicts, additional comments provided by respondents reflect an understanding of farming activities and more generally, an appreciation for farmers. As provided in Figure 14, while the use of pesticides remains a concern amongst residents, particularly those in Pallek Estates, residents seem to understand the necessity of these farming activities and accept the inconveniences they may create. This appreciation of agriculture is imperative if farmers are to have a continued presence within the community.
This region was agricultural first and we chose to move here. I think the farming practices are as/more relevant than residential developments.

My only complaint is the spraying of chemicals.

We strongly encourage agriculture for food - we are not necessarily excited by the growing abundance of wine grape production over food, such as fruit!

PESTICIDE use should be NON-TOXIC!! We have children whose lives will be affected by this.

I bought my lot on basis it was adjacent to farmland. My concern is the regulation of farmland. Property value increased because of vineyard.

Subdivisions were built after the farms were in place so farmers should have the right to do as they need to.

Crop success must come first. Farmers feed Canadians - regulating them puts them out of business. Farmers and residential areas don’t mix well.

I believe that one should not buy property close to a farm and expect them to change! Our home backed onto an open field and an existing vineyard, it has been unused for some time but when it did get farmed it was the pesticide spraying that was the worst. The rest was fine.

I would like to see less reliance on chemical pesticides and fertilizers. Otherwise, I respect the need for agricultural lands and activities to co-exist with residential

There needs to be some compromise by both groups but farmers were here first. We need to educate ourselves

Pesticides and fertilizers are the main concern

Understanding of others’ interests is worth some consideration!

Figure 14 - Resident comments regarding awareness of the impacts of farming on residents

Town Council, Development and Planning Policies

The final statements provided to residents were in regards to policies town council should pass, restrictions related to future residential development and whether better planning policies are required within Niagara-on-the-Lake. As made apparent in Table 12, resident responses to these statements were quite variable. To begin, when asked about the role of town council, the only statement to receive resounding support was related to including the opinions of residents when regulating farming activities that take place in close proximity to residential homes. Given the overall dissatisfaction with the use of pesticides and comments reflecting that in this section, it is evident that residents would like to be included in discussions related to nearby farming. The passing of by-laws related to wind machines and debris on roadways however, received much less
support and are likely not a significant issue within these communities. This was echoed by a resident from Pallek Estates who stated that, “council should try to help – but I don’t think we should put too many rules on our farmers. As a resident I know what I am dealing with – it is my responsibility, not someone else’s.” This was also reiterated by a resident from Carriage Court Estates who felt that, “town council needs to respect that Niagara-on-the-Lake is a bountiful agricultural community first. Individual residents need to be cognizant of that and can and should make their choices accordingly.” These comments are promising, as they show that some residents have moved beyond conflicts generated by some agricultural activities and feel that the creation of restrictive by-laws by Town Council should be limited.

### Table 12 - Resident responses related to town council, development and planning policies

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Council should pass a by-law restricting the use of wind machines at night</td>
<td>6</td>
<td>4</td>
<td>11</td>
<td>10</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>Council should pass a by-law requiring farmers to keep adjacent roadways clean or clear of debris</td>
<td>7</td>
<td>9</td>
<td>11</td>
<td>8</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>Council should consider the opinions of nearby residents when regulating farm activities that take place close to residential homes</td>
<td>7</td>
<td>16</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Council should require a minimum separation distance between farming and residential land uses</td>
<td>8</td>
<td>13</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>The development of new residential neighbourhoods next to active farmland should be discouraged</td>
<td>11</td>
<td>8</td>
<td>11</td>
<td>8</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Better planning policies are required within the town of Niagara-on-the-Lake to limit the impacts of farming on nearby residents</td>
<td>13</td>
<td>10</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>

When discussing residential development and planning policies, respondents provided less varied answers that generally supported better planning policies and less development. For instance, existing residential development adjacent to agricultural land in Niagara-on-the-Lake appears to have a limited separation as many homes have only a
fence, if anything, separating them from the adjacent farm. Considering this lack of separation, it is not surprising that the majority of residents agreed or strongly agreed that a minimum separation distance be required between residential and agricultural land uses.

Secondly, nearly 50 percent of residents agreed or strongly agreed that the development of new residential neighbourhoods next to active farmland should be discouraged, with nearly 30 percent of all respondents remaining neutral on this topic. Similarly, 61 percent of respondents agreed or strongly agreed and 26 percent remained neutral regarding the statement that better planning policies are required within the town of Niagara-on-the-Lake to limit the impacts of farming on nearby residents. Resident comments provided in this section, however, appear to be in favour of protecting farmland from residential development and not for protecting residents from farming. For instance, a resident in Shaw’s Lane commented that,

the town needs to take a more active role in protecting farmers and farmland. If we lose the farms and the remaining farmers become too discouraged to continue farming, who will provide our food? Farmers feed cities. They need to be supported and promoted.

This comment was echoed by another resident in Shaw’s Lane who stated that, “farmland is a TREASURE and should be treated as such. Stop allowing developers to keep on taking it over.” Such comments provide a positive outlook regarding conflicts between residential and agricultural land uses as they imply that residents understand the importance of agriculture and are willing to accept its inconveniences and support its role within the community.

Conclusion

This chapter sought to explore how residents are impacted by nearby agricultural land uses, their preferences regarding farming activities and how conflicts can be
mitigated through town council and planning policies. A surprising finding from this chapter was in regards to the use of wind machines on adjacent farms and the relative indifference residents have towards them. Considering the long and often intense conflict that initially arose from the use of wind machines, it was interesting to learn that this equipment does not currently impact the majority of residents and that they understand the necessity of its use. This was a key finding as it means residents are aware as to the implications of various farming activities and generally support farmers in their endeavours.

A second finding within this chapter is in regards to the application of spray fertilizer and/or pesticides and the overwhelmingly negative response garnered from participants. This activity did, however, receive the greatest level of opposition from the Pallek Estates neighbourhood where younger families are the dominant demographic. This dissatisfaction with pesticides and/or fertilizers seems to generate from a need to protect children from the harsh chemicals used in this practice, hence the lack of support in Pallek Estates. While a desire to protect ones family from unknown chemicals and toxins is understandable, it was interesting to discover the high levels of unrest towards this activity.

Lastly, this chapter found that residents of Pallek Estates, Carriage Court Estates and Shaw’s Lane appear to support agriculture within Niagara-on-the-Lake. Indeed, many of the comments provided by residents throughout the survey championed farming and the importance of this industry to society. In fact, many residents felt town council needed to better protect farmland from development and encourage farming within the community. The level of support for farming may also be attributed to a “drawbridge
mentality”, as many residents would likely prefer adjacent farmland instead of a new subdivision. Indeed, the nuisances associated with some farming activities are short lived, whereas a subdivision would result in a variety of other nuisances and less privacy for adjacent residents. Regardless, given the loss of agricultural land in Niagara-on-the-Lake to residential development, this finding is positive and may help ensure that agriculture remains prominent within the town.
Chapter 5
The Impacts of Residential Land Uses on Farmers

Moving beyond the resident perceptions, the purpose of this chapter is to explore the farmers’ position related to the conflict between agricultural and residential land uses. While residents have typically been more vocal through public forums regarding the impacts of agricultural development, farmers have been comparatively quiet on these issues. Throughout the wind machine debate farmers did not create a task force or community group, nor did they launch a letter writing campaign in support of this equipment. Instead, OMAFRA, Stratus Winery and a handful of passionate residents fought to support agriculture and protect farmers during this conflict. Considering the relatively minor role farmers played in the public debate, it is important to understand how they are impacted by such conflicts. This chapter will attempt to provide farmers with a voice and explore the ways in which residential development impacts farmers, their land and the activities they conduct.

This chapter will follow a similar layout to Chapter Four, as it will explore impacts, preferences and solutions to land use conflicts in Niagara-on-the-Lake. Specifically, it will explore farmers’ preferences related to agricultural activities, how they are impacted by adjacent residential development, and what solutions can be reached regarding the conflicts associated with adjacent land uses through policies, planning and the Town Council. Understanding the impacts and preferences of farmers, as well as how they believe conflicts should be resolved, will provide a more complete analysis of the problems related to residential and agricultural land uses.

First, this chapter will briefly explore agriculture within Niagara-on-the-Lake, including the question of whether agriculture is appreciated in this community and if
farmers plan to remain in the field. It will then explore agricultural practices to determine the level of acceptance of certain activities amongst farmers and the importance of such practices. As the conflicts that often arise regarding agricultural activities are built upon a level of misunderstanding and residents are often unaware of the importance of many agricultural activities, it is important to gauge the farmers’ perspective regarding these practices. Accordingly, the first section of this chapter will analyze agricultural practices, creating an understanding of what activities are deemed necessary and garner overall support amongst farmers in the community. If certain activities are considered normal farm practices by OMAFRA and are regarded as necessary by the farming populace, resolving any ensuing conflicts will be difficult, given the necessity of these activities. If, however, these activities are not deemed a necessity, conflict resolution should be possible as concessions by the farmers may be possible.

The second section of this chapter will explore how farmers are impacted by adjacent residential land uses. Many of the conflicts related to agriculture portray the resident as the victim and farmers as the aggressor. This section will provide a new facet to the conflicts between adjacent land uses, as it will detail how residents impact farmers, a side of the conflict that is rarely explored in Niagara-on-the-Lake. The farming community appears to be introverted in comparison to the residential community, as they rarely speak out and depend on organizations, such as OMAFRA, to protect them from the complaint driven campaigns of residents. Ergo, this section will expose how farmers are impacted; unearthing a variety of complications with which the agricultural community constantly grapples.
The third and final section of this chapter will analyze potential solutions, to mitigate how farmers are impacted by residential development. It will examine the implications of policies related to agriculture and planning, as well as development initiatives and the roles of Town Council. As farmers have a limited influence regarding potential policies, resolutions related to future development and the role of Town Council may have the most effective impact.

Data presented in this chapter were obtained by means of farmer surveys and in-depth interviews. While locating willing participants for this section proved difficult, as discussed in Chapter Two, I am confident that the data collected provides an accurate representation of the conflicts related to residential development in Niagara-on-the-Lake. To gauge the expertise of the interview subjects, a brief overview of these farmers is provided in Table 13. In addition, supplementary data were obtained through an interview with an agricultural engineer, representing OMAFRA. The additional information gained through this interview helped to provide a governmental perspective on the conflict and substantiates many of the claims made by farmers. The importance of these insights is based upon the fact that OMAFRA often negotiates rights for farmers and aids in informing the public of the importance of many agricultural activities.

### Table 13 - Description of farmers who participated in an interview

<table>
<thead>
<tr>
<th>Farmer Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dave</td>
<td>A part-time farmer who has owned his own farm for 13 years. The farm is predominantly a vineyard, growing grapes for area wineries. He is also an active member of the town’s Agricultural Advisory Committee.</td>
</tr>
<tr>
<td>George</td>
<td>A part-time farmer who retired from his external career. He has been farming since the 1950s and grows tender fruit. His land is adjacent to a residential development.</td>
</tr>
<tr>
<td>Mark</td>
<td>A full-time farmer who engages predominantly in the cultivation of wine grapes and fruit, including peaches and plums. Has been an active member of many agriculturally-related town committees.</td>
</tr>
<tr>
<td>Jake</td>
<td>A full-time farmer who has owned and rented farmland since 1984. One of the rented farms is adjacent to a large residential development and acts as a buffer for a nearby greenhouse operation. He is also an active member of the town’s Agricultural Advisory Committee.</td>
</tr>
<tr>
<td>Rob</td>
<td>Head wine maker for a winery located adjacent to two residential developments. Has held this position for seven years and manages all aspects of the winery.</td>
</tr>
</tbody>
</table>

5 To ensure confidentiality of respondents’ answers, their names have been changed.
Agricultural Landscape in Niagara-on-the-Lake

It is important to first understand how farmers perceive agriculture in Niagara-on-the-Lake, including if they believe farming is appreciated within the community and whether they plan to continue in this field. As conflicts can become discouraging, a farmer’s determination and level of resilience are a pivotal characteristics signifying the future of agriculture in Niagara-on-the-Lake. The second focus of this section will be to evaluate farming activities and farmers’ preferences regarding what they consider to be acceptable activities. Farming activities generate a variety of noises, odours and visual nuisances that often result in the generation of complaints or escalation of conflict. Many of these activities, however, are vital to the successful operation and longevity of a farm and as such, cannot be avoided. Comprehending whether farmers consider pesticides, fertilizers, bird bangers and wind machines, among other practices, to be a necessity or an acceptable farm activity is an important starting point for this chapter. The final focus of this section will provide an analysis of how farmers perceive residential development within Niagara-on-the-Lake. Understanding farmers’ perceptions of residential development is necessary before we can understand how they are impacted by this adjacent land use.

Farming in Niagara-on-the-Lake

Survey respondents were first asked to evaluate Niagara-on-the-Lake, whether they would continue farming, and if they believed there was a strong future for agriculture within the community. As summarized in Table 14, farmer responses were quite divided for two of the questions. The majority of farmers agreed or strongly agreed that Niagara-on-the-Lake is an ideal community for agriculture and that they would
continue farming until they retire. While these responses were positive, the statements exploring whether agriculture is appreciated in Niagara-on-the-Lake and whether there is a strong future for farming within the town were decidedly more negative.

Table 14 - Farmers' responses related to agriculture in Niagara-on-the-Lake

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niagara-on-the-Lake is an ideal community (for agriculture)</td>
<td>6</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>I plan to continue farming in Niagara-on-the-Lake until I retire</td>
<td>8</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agriculture is appreciated in Niagara-on-the-Lake</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>There is a strong future for agriculture in Niagara-on-the-Lake</td>
<td>-</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

The appreciation of agriculture within Niagara-on-the-Lake was generally evenly split with six respondents agreeing to a certain degree, five respondents remaining neutral, five respondents disagreeing to some extent and one respondent unsure. Such split results are discouraging, as a perceived lack of appreciation does not encourage farmers to remain within this profession. A farmer who has lived in the town for 51 years and has farmed for 24 years stated, “those residents who have been born and raised in the Niagara Region generally have [an] appreciation for farms and their operations. However, many new residents… do not understand or respect all that is involved in operating farmland…” This statement seems to imply that newer residents do not appreciate or understand agriculture, a sentiment that is complicated due to the popularity of the community to potential new residents. Alternately, a higher level of appreciation could reflect that farmers are valued within the community, thus encouraging them to continue within this labour intensive career. Furthermore, the majority of respondents disagreed that there is a strong future for farming in Niagara-on-the-Lake. Considering the favourable climate and high quality soil, the fact that nine of the farmers disagreed or
strongly disagreed with this statement, while only three agreed, is perhaps, surprising.

One farmer provided a detailed explanation regarding the future of farming stating,

> The future of farming in NOTL, as in other communities is dependent on viability. Locals can contribute to this viability by visiting retail establishments or going to local farmers markets. Buying local produce from chain stores does not help. Buying local means from local wineries and markets, not the LCBO. Most people mouth the word that they support local agriculture, but do not follow through in their purchasing decisions. Economists will dictate whether agriculture has a future in NOTL.

Similar statements were made by a number of other farmers, as the high costs associated with the production of food, such as labour costs, regulations regarding pesticides, relaxed global policies related to food production, pesticides and food safety, as well as the dumping of cheaper produce into Canada, significantly affect the future of agriculture in general.

Specifically related to Niagara-on-the-Lake, many farmers lamented the impacts of residential development hindering the future of agriculture in the community as land is lost and the character of the community is altered. For example, one survey respondent commented, “in the last 15 years NOTL is getting too many homes using all the farming land. The people moving here – a lot from Toronto to retire – are changing NOTL for the worse.” Other survey respondents who reiterated this comment seem to imply that the future of farming in Niagara-on-the-Lake hinges on residential development and the subsequent loss of agricultural land. The future of farming was viewed more positively amongst the farmers I interviewed, as each saw a bright future for this industry. While they generally felt a shift would occur in what is produced, with less tender fruit and more grapes for wine, they nonetheless felt agriculture would remain within the community. It is positive that the opinions of the interviewees provided an optimistic
outlook on the future of agriculture; however, the more negative view provided by survey respondents is unfortunate. It can be hypothesized, then, that if a minority of farmers see a bright future in agriculture, the overall outlook for this industry may not be as favourable.

**Agricultural Activities**

Farming practices that generate offensive odours, noises and sights often result in conflicts between residential and agricultural land uses. Residents who move into homes adjacent to active farmland are often unprepared for this feature of rural communities. This section will explore the opinions of farmers regarding the necessity of agricultural activities that are a commonly considered offensive in Niagara-on-the-Lake and are summarized in Table 15.

***Table 15 – Farmers’ responses regarding the necessity of specific farm activities***

<table>
<thead>
<tr>
<th>Activity</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spraying fertilizer and/or pesticides is necessary to ensure optimal crop production</td>
<td>13</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>The use of bird bangers is necessary to reduce the loss of produce</td>
<td>11</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wind machines are necessary to reduce the threat of frost</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>The noise associated with the operation of farm equipment is a normal part of agricultural activity</td>
<td>11</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The spraying of fertilizers and/or pesticides generated a negative response from residents who did not deem this practice as acceptable. Farmers, alternately, overwhelmingly agreed or strongly agreed that this activity is necessary to ensure optimal crop production. Pesticides and fertilizers offer farmers a level of protection against insects and disease, which help to ensure crops grow uniformly to meet consumer demands. One farmer commented that the public is simply paranoid about pesticides,
paralleling a lack of understanding to the high levels of fear amongst residents. While this may be a valid argument, the growing popularity associated with organic produce may ensure that removing this paranoia or fear will be impossible.

The three remaining categories related to noise-generating activities also received a high level of agreement amongst survey respondents. Given that bird bangers and wind machines are typically only used in vineyards, the support for these activities provided by tender fruit growers and greenhouse operators was encouraging. Generally, it indicates that the farming community is a cohesive unit, which supports one another. Comments provided by survey respondents, however, appear to portray a more splintered group, as the use of bird bangers and wind machines are seemingly controversial amongst tender fruit growers. For example, one tender fruit grower stated, “I don’t like bird bangers – we as farmers are not making friends with our neighbours because of excessive use of bangers.” Another farmer also had a strong opinion regarding these agricultural activities asserting, “the propane bird bangers have limited results and only make the farmer feel good…” and when discussing wind machines, felt they were simply “just a farmer succumbing to the band wagon mentality.” These comments are quite condemning of many activities deemed normal by OMAFRA and imply that a division between tender fruit growers and grape growers may exist.

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6 While tender fruit growers may not agree with the use of wind machines, many have relied on helicopters to act as temporary wind machines when a damaging spring frost occurs. A devastating frost in May 2012 resulted in many growers hiring helicopters to fly over their fields in an attempt to protect the tree buds. While it was estimated that 50 percent of some crops were destroyed, the use of helicopters may have protected some orchards, perhaps proving the importance of wind machines beyond vineyards to tender fruit growers.
Understanding Residential Development

Residential development has become a contentious issue within Niagara-on-the-Lake as much of this growth occurs on or nearby agricultural land. As such, this section will explore farmers’ opinions on the importance of residential development and the future of this development within the community. Survey responses to statements regarding residential development are provided in Table 16 and generally portray a division amongst farmers.

<table>
<thead>
<tr>
<th>Table 16 - Farmers’ opinions regarding residential development in Niagara-on-the-Lake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential development is important to Niagara-on-the-Lakes economy</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Existing residential development adjacent to agricultural land does not create a problem for farmers</td>
</tr>
<tr>
<td>Future residential development should not take place adjacent to active farmland</td>
</tr>
</tbody>
</table>

While residential development provides the town with what is often seen as much-needed tax revenue, it is clear that farmers are not convinced that this development is important to the town’s economy. While the majority of respondents agreed or strongly agreed with this statement, nearly one-third disagreed to some extent, showing a clear division amongst farmers. One farmer made this clearly evident, stating,

> With all the infrastructure that people demand, residential developments are net drains on the local economy, only sustainable with tax money from other levels of government. Small segments of the business sector make money from development, but they do not pay the full cost of development. If they did (and they should), it would be reflected in the cost of the houses, resulting in much smaller houses and thus, more houses/acre. This would thus save farmland and our economy.

This comment is interesting as it identifies many issues associated with creating residential neighbourhoods in rural areas where the infrastructure needs are nonexistent.
While new residents enjoy the larger lots and subsequent houses, this development comes at a high cost to the community, thus making it unsustainable and, perhaps, not financially beneficial to the town’s economy.

When contemplating the impacts of existing residential development on adjacent farmland, farmers were less divided. In fact, 82 percent of respondents disagreed or strongly disagreed with the statement that existing residential development adjacent to agricultural land does not create a problem for farmers. This response is troubling as it could imply that these farmers have had problems with adjacent residential developments or are aware of problems that have arisen between other farmers and adjacent residents. One farmer supported this reasoning and commented that, “there are so many newcomers complaining about farm noises, spraying, tractors, etc. that they forget that we were here first and most of them moved here because of the farming beauty and supply of fresh orchard fruit.” While this comment accurately summarizes many resident motivations for moving to Niagara-on-the-Lake, it is unfortunate that this motivation ultimately creates problems for the farmers.

Finally, farmers were again divided with a statement regarding where future residential development should occur. While the majority of respondents agreed or strongly agreed that residential development should not take place adjacent to active farmland, more than one-third disagreed to some extent. One farmer bluntly stated, “it is all farmland, so new development will need to be next to farmland,” acknowledging the impossibility of halting development adjacent to agricultural land uses. Alternately, another farmer offered a solution, commenting that “future development is important in any community for financial reasons, however, any residential [developer] should make
clear to purchasers the importance of the agricultural operations that may surround these areas.” This comment is positive as it acknowledges the importance of residential development but also provides a solution to the potential conflicts associated with this development through education. Interestingly, it also mirrors similar responses from resident respondents who agreed that residents should be informed of the nature of nearby farming activities before they move to these developments.

While it is true that residential development will have to continue in close proximity to agricultural land, given Niagara-on-the-Lake’s landscape, farmers identified an additional complication to this growth. The development of subdivisions within Niagara-on-the-Lake causes significant residential growth within the community; however, it is not the only form of residential development farmers must contend with. A second, popular form of migration to the community involves the development of retirement lots or the purchase of small farms and adjacent homes by non-farmers. This type of migration is complicated because it places previously non-rural residents farther into the countryside where they are surrounded by farms. These new residents, referred to as non-farm rural residents, do not live in the urban area boundaries where the large-scale planned developments are located. Instead, they are in the rural countryside immersed in the agricultural landscape with little separation between land uses. While retirement lots were initially conceived to provide a farmer with a small lot adjacent to their farm to retire, in recent years these lots have been sold to new migrants as the farmers retire or pass away. Jake laments on the trouble of these lots stating, “I never liked the retirement lot idea. I was against that all the time because you would give a farmer a retirement lot, he would live there for a short time, move out or pass away, an
urbanite would move in and now I have a headache.” Mark reiterated this point, commenting that, “those houses have been moved around once or twice and now it’s truly city people who want the lifestyle of the countryside but don’t really understand what’s going on until they get here.” While the creation of retirement lots is no longer allowed, undeveloped building lots are still available within the community and will be built on, eventually.

Retirement lots can, in some instances, be more complicated than large residential neighbourhoods, as these lots are surrounded by farmland. Large-scale residential developments are generally not surrounded entirely by agricultural land, thus providing some residents with a reprieve. Retirement lots, alternately, were designed so that a farmer could retire near their farm, a concept that, while initially beneficial to farmers, has since caused farmers significant problems with the influx of non-rural migrants. This alternative form of residential development means that the complications associated with residential and agricultural development are no longer on the fringes of the Urban Area Boundary, but have instead spread throughout much of the countryside.

While divisions between farmers were evident throughout the survey questions, most noticeably between tender fruit growers and grape growers, there appears to be unity amongst the farmers regarding most of the farming practices. Comparatively, division between farmers was evident in regards to the importance of residential development and the future location of such development, even though the majority of farmers felt residential development adjacent to agriculture created problems for farmers. This division amongst respondents implies that while farmers acknowledge the inherent problems between residential and agricultural land uses, many understand the importance
of such development or feel forms of compromise and solutions are available. In contrast, survey respondents were less united in regards to the future and appreciation of farming within the community, providing evidence of a potential fissure between agriculture and the town of Niagara-on-the-Lake. Such a fissure would be unfortunate as agriculture is such a prominent fixture of the community’s landscape. Lastly, the migration of non-rural residents farther from the urban boundaries and into the rural countryside implies that many of the problems associated with residential development are no longer confined to the urban area boundaries. This second aspect of residential migration can have a lasting, more complex impact on the rural agricultural community as non-farmers populate the countryside unregulated.

**Impacts of Residential Development on Agriculture**

The impacts of residential development on farmers have been documented much less in Niagara-on-the-Lake because farmers have been significantly less vocal than residents during times of conflict. As such, the needs of farmers, the necessity of certain farm practices, and how they have been affected by adjacent residential development are often not as easily visible. Considering the lack of clarity on the issue, this section will detail how farmers have been impacted by residential development at an individual level and how residential development, abetted by planning policies, have influenced agriculture at a community level.

**Individual Farmers**

Farmers have been most drastically impacted at an individual level by the generation of complaints regarding agricultural practices. These complaints often concern the use of pesticides and fertilizers, noise associated with bird bangers and wind
machines, smoke associated with burning of brush, or the occurrence of any of these activities early in the morning or late in the evening. According to an agricultural engineer from OMAFRA who deals directly with nuisance complaints, the vast majority of complaints within the Niagara Region are generated in Niagara-on-the-Lake. Furthermore, these complaints have steadily increased with the influx of new residents to the town, as there are significantly more people residing in close proximity to farms. The agricultural engineer stated that in “NOTL you’ve got people coming in from other areas who have maybe not heard stuff before [because] they're not from the area.” This statement was supported by Mark, who remarked, “you have people moving into the country from the city who have no clue what’s going on out here. I'm not saying that maliciously, they just don’t understand how or what we do and you know, they are more prone to call government agencies.” Indeed, as these residents are not from the area and likely not familiar with agricultural activities, they are more likely to complain about some farm practices, forcing their neighbour to adjust their activities. This has a large impact for farmers, as they have more neighbours who do not necessarily understand what they are doing and are, therefore, quick to complain. According to the agricultural engineer, “every farmer in NOTL’s got 100 neighbours, minimum 100 neighbours that he can actually see. You can go to certain areas in Ontario where you can't even find one neighbour and that’s a lot easier, it’s a lot easier to farm there.” The impacts associated with increased neighbours are difficult for farmers to deal with and, as stated by the agricultural engineer, it is a lot easier to farm in isolated areas where farmers do not have to deal with adjacent landowners.
Complaints related to spraying fertilizer and pesticides offer the largest impact for farmers as they are forced to deal with the limitations associated with the natural environment as well as their neighbours. Considering that residents are fearful of the health hazards related to spraying, farmers are constantly inundated with complaints from adjacent landowners. Dave, for example, lamented the lack of understanding residents have regarding the reasons why farmers spray pesticides,

People complain that we don’t care about the environment because we spray. We don’t want to spray, we don’t like it, but they think we want to hurt them or the environment. They think spraying causes cancer or unsafe food. These are emotional issues. How do you tell someone that we’re not causing cancer when they're convinced that we are?

Other farmers reinforced this statement, reflecting on the importance of the spray schedule, based upon the development stages of insects or when disease is likely to occur. In some cases, there is only a three-day window when a farmer can spray and the day chosen is often influenced by weather patterns, such as wind direction and speed. Farmers, however, are still conscientious of their neighbours and as many remarked, try to spray on days when they are least likely to affect the adjacent residents. Jake, for example, stated, “…I’ve got very close neighbours [and] if the winds blowing, I’ll turn the sprayer off. I try not to spray if the wind is blowing at their house.” George followed a similar guideline as he attempts to spray when his neighbours will not be impacted, commenting, “I have to spray basically when there’s no wind or when the wind is coming out of the west because I don’t want to pollute my neighbours across the road with spray.” These measures are proactive and show consideration by the farmer as they strive to conduct this noxious activity at times when their neighbours will be least impacted. This does, however, impact farmers, as they are no longer concerned only with protecting
their crop, but trying to appease adjacent neighbours, an additional consideration that complicates the nature of this agricultural activity.

While farmers have been proactive when dealing with complaints related to spraying, this behaviour does not always placate residents. For instance, after having numerous visits from representatives from OMAFRA and the Ministry of the Environment due to complaints regarding the spraying of chemicals and fertilizer, Mark was forced to invest in a wind reader in order to fully document his activities. With the aid of a wind reader Mark can accurately document the wind direction and speed at times when he is spraying, in order keep records of his actions and appease government representatives when they are dealing with a nuisance complaint. Mark explained that,

The wind meter I bought just to make sure that if we’re spraying and if it’s a bit windy to document what the wind speed was when I’m spraying. If they come out from a complaint about my spraying, I can defend. If they come out and ask me what’s going on, I’ll say ‘nope, we checked the wind before we started and it was fine’.

The importance of documenting agricultural activities is an unfortunate result of the conflicts between residential and agricultural land uses; however, documentation will provide a farmer with a level of protection against nuisance complaints. Buying new equipment, such as a wind meter, for the sole use of documentation to protect a farmer, certainly is an unfortunate consequence of the changing rural landscape.

Nuisance complaints have not been limited solely to spraying fertilizers and pesticides as noise issues often arise. Initially, wind machines were the crux of most resident complaints related to agricultural activities, and while these complaints have declined, individual farmers are still forced to deal with problems that arise from using this piece of equipment. According to Dave, the wind machines were a contentious issue
with his neighbours when they were installed, as he stated, “I have wind machines now, and I know my neighbours hated me as soon as I put them up, but it’s a part of farming and I have to have them.” The complaints associated with wind machines appear to have significantly offended farmers, as they view this equipment as a necessity. In fact, Jake, Mark and Rob likened wind machines to an insurance policy, claiming that one wind machine will protect eight to ten acres of grapes, which are valued at $8,000 to $9,000 an acre. Considering that one significant spring frost could decimate an entire vineyard overnight, wind machines can easily be considered a necessary protective device. While it did appear that residential complaints regarding wind machines have lessened, farmers are still aware of the irritation associated with this equipment.

One final impact that affects individual farmers concerns vandalism. As residential areas expand and non-rural residents move to the countryside, farmers become surrounded by more people. The higher proportion of nearby residents can result in instances of vandalism, as equipment gets damaged. Vandalism to nuisance related machinery has been reported to OMAFRA, as the agricultural engineer discussed this increasingly common phenomenon. Dave, in particular, shared a story and his frustration regarding vandalism to a bird banger:

I know a farmers trying his best to, he’s trying to make money and what the rural residents and other people don’t understand is how much money’s at stake and that for instance, if you have birds, you have bird bangers. I put a bird banger out here when I did ice wine about 12 years ago and someone had taken a baseball bat to it, one of the neighbours around here, to destroy it. You know I was very conscientious when it went on, when it went off, it has timers on it, so that it’s at least when the sun is shining it’s on. But somebody didn’t like it and they ruined it on me. They have no idea; first off, it cost me a few hundred dollars to fix it. Secondly the potential loss to crops would be 500 bucks a day, so if you do that for 10 days, there’s $5,000. If I went over and I took $5,000 from them, they did that to me, if I did that to them, you know,
they would be screaming at me, but they don’t get it, that that’s what you’re causing. That’s the kind of losses you're causing, but they don’t understand that. It’s just ‘oh they’ve got lots; there's lots out there, what’s the big deal?’ So they don’t have an appreciation for the value of what’s actually out here and what the costs are.

The costs associated with vandalism are not limited to the equipment affected. As is evident by Dave’s story, they can have long lasting impacts. The loss associated with vandalism is difficult to estimate, as many of these crimes are not reported to police or officially documented; however, this is a serious impact, a crime in fact, as farmers effectively become victims of rural population growth.

Individually, farmers are impacted by residential growth most often through nuisance complaints. These complaints are dealt with at an individual level, resulting in localized impacts throughout the agricultural community. Understanding that farmers consider pesticides, fertilizers, bird bangers and wind machines as essential to growing a bountiful crop complicates many of the conflicts that arise. Farmers do not consider these activities to be unnecessary or done in a malicious manner to upset nearby residents. As Mark simply stated when discussing bird bangers and pesticides, “we’re not out to do any of this stuff, some of this stuff you do because you have to.” While farmers are mindful of the adjacent residential developments and try to appease their neighbours when possible, conflicts related to pesticide use and vandalism are likely to continue as residential development intensifies and non-rural residents move to the countryside.

Farming Community

The farming community as a whole is also impacted by residential development through by-laws created subsequent to resident complaints. By-laws impact the entire
farming community as they are not case specific and require compliance from every farmer. This section will specifically explore how noise by-laws have impacted the agricultural community through restrictions placed on the time certain equipment can be operated. While this impact may seem less significant, farmers do not follow a typical work schedule and certain activities are more efficient in the evening, when many noise by-laws prohibit their use. It will also address restrictions placed upon where farm equipment can be located and how this impacts agricultural land uses. As regulations restricting agricultural equipment appease adjacent residents, they can negatively impact farmers by altering how they use their land.

According to the Town of Niagara-on-the-Lake, noises that are included within the by-law are those “likely to disturb the inhabitants of Niagara-on-the-Lake” (Town of Niagara-on-the-Lake, 1970). This definition is quite ambiguous as many farming activities, such as bird bangers and wind machines, can be considered a disturbance. Farmers are fortunate, however, that OMAFRA has deemed the aforementioned activities as normal agricultural practices, meaning municipal regulations, such as noise by-laws, cannot limit their use. The noise by-law does, however, limit other activities, such as irrigation, which rely on running motors to pump water over orchards. Mark, for example, has been impacted by the noise by-law, which dictates when he can conduct certain activities. He stated:

We want to run irrigation pumps. The best time to run an irrigation pump is over night when you don’t have any loss to evaporation, but you’re supposed to shut them off by eleven for the noise by-laws. So you know, we’re supposed to operate efficiently, but we’re hamstringed by these regulations because someone doesn’t want to listen to a diesel pump hum all night long.
As many farmers lament, they do not make a lot of money in this field and, as such, desire to run as efficiently as possible. Regulations, such as the noise by-law, force farmers to run certain equipment at times that are not optimal, reducing their efficiency and further diminishing their returns.

The second major regulation that has impacted the farming community is in regards to the location of equipment and minimum distances separating it from adjacent residential land uses. Regulated through OMAFRA, bird bangers and wind machines, in particular, must be at least 125 metres away from residential dwellings. These distance regulations, while beneficial to residents, are difficult for farmers as they can negatively impact crops. Crops that are farther away from wind machines and bird bangers are at the mercy of frost or birds, as they do not receive the same benefits as crops near this equipment. Such distances ultimately impact the crop development and growth, eventually resulting in a less ideal harvest and potential income loss.

Restrictions placed upon farming activities proved to be a contentious issue amongst survey respondents, as shown in Table 17. While the majority of farmers agreed to some extent that the location of bird bangers and wind machines should not be restricted due to residential land uses, 41 percent of respondents disagreed or strongly disagreed with these statements. Respondents who disagreed tended to be tender fruit growers, while grape growers more often agreed with these two statements. As tender fruit growers typically do not use wind machines and bird bangers in their orchards, their desire to limit the use of bird bangers and wind machines shows a lack of solidarity among farmers. One farmer who agreed that bird bangers and wind machines should not be restricted due to adjacent residential land uses stated, “people always complain about
the noise of bird bangers and the wind machines…. If they don’t want to hear country noises then they shouldn’t live in the country!” Another farmer responded similarly, commenting that, “people who move into an area of agricultural production are a parallel to those who move next to an airport and then complain of noise from [the] airport.” It appears then, that many farmers feel new residents do not have the right to limit the activities that occur on an adjacent, existing land use. While an understandable stance, in his interview, Mark countered that, “we were here first’ is a nice saying, but it doesn’t really get us anywhere.” Indeed, as another survey respondent appropriately remarked, “some compromise on these issues is necessary – some give and take will be necessary to live in peace with [our] neighbours.”

Table 17 - Farmers' opinions regarding restrictions on agricultural activities

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<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The location of bird bangers should not be restricted because of adjacent residential land uses</td>
<td>4</td>
<td>6</td>
<td>-</td>
<td>7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>The location of wind machines should not be restricted because of adjacent residential land uses</td>
<td>3</td>
<td>7</td>
<td>-</td>
<td>5</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Farmers should limit or modify their activities where these occur in close proximity to residential land uses</td>
<td>-</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Residential complaints associated with farm activities unfairly limit a farmers use of their land</td>
<td>6</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>-</td>
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</table>

Farmers were also divided when addressing whether farmers should limit or modify their activities when they take place in close proximity to residential land uses. Interestingly, respondents who felt farmers should modify their activities were all tender fruit growers, with the exception of one grape grower. Again, these results can be likened to the fact that tender fruit growers do not rely on these noise-generating agricultural activities and, consequently, would be more open to their regulation. Finally,
the vast majority of farmers agreed that residential complaints unfairly limit a farmer’s use of their land. This finding was surprising, given many farmers felt restrictions should be placed on agricultural activities that take place close to residential land uses. Considering that adjacent residents usually generate complaints, it is interesting that some farmers support restrictions, but feel residential complaints unfairly limit their use of their land.

Residential development has significantly impacted farming at an individual and community level through nuisance complaints. While regulations have not been put in place regarding the spraying of pesticides and fertilizers, it appears that farmers are most cognizant of residents’ dissatisfaction of this activity. As such, farmers have voluntarily adjusted their practices to lessen the impact of spraying on adjacent residents, ultimately complicating this practice for farming. This proactive measure, however, has not always appeased all residents as nuisance complaints continue and farmers are forced to document their every move. Beyond pesticides, noise complaints regarding wind machines and bird bangers continue to be an issue for individual farmers, as neighbouring residents do not accept this nuisance or understand the use of this equipment. This lack of understanding has resulted in vandalism, requiring farmers to risk crop loss and spend money repairing damaged equipment, ultimately reducing efficiency. At a community level farmers have been impacted through regulation, such as noise by-laws and minimum separation distances, which impede a farmer’s use of their land. Restrictions placed upon agricultural activities due to residential complaints are viewed as unfair by farmers and can generate conflict within the community. With an understanding of how
farmers are impacted, the remaining section of this chapter will analyze possible solutions to these issues.

**Resolutions and Farmer Recommendations**

The final section of this chapter will explore possible resolutions to mitigate the impacts of residential development on agricultural land uses. It will begin by analyzing resolutions suggested by farmers to reduce the complaints generated from new residents before examining the role of policies, planning and development procedures in preventing future issues. As residents within Niagara-on-the-Lake largely outnumber farmers, it is important to explore solutions that can better protect this minority and ensure a viable future for agriculture.

**Reducing Resident Complaints**

Farmers suggest that complaints related to normal farm practices are due, at least in part, to a lack of understanding. In particular, participants suggested that education was the most important factor in mitigating conflicts related to agricultural practices. The acknowledgement by farmers that education will help mitigate conflicts is important, as it closely mirrors a solution suggested by residents. While some residents felt it was the responsibility of potential new residents to become educated, farmers suggested that it should be the responsibility of both the real estate agent and the resident. To begin, placing a greater responsibility on the real estate agents to inform potential residents of the nature of the adjacent agriculture would better enlighten many residents who might not accept the farming activities. This recommendation was supported by OMAFRA’s agricultural engineer who stated, “I think there’s some onus on the people moving in [and] there’s onus on realtors; I think they have a big part that they should be playing but
they don’t, they don’t want to. Nobody ever shows a house when there’s bird bangers going off next door.” Indeed, the rural idyll becomes harder to sell to new residents when bird bangers, resembling the sound of gunshots, are going off in the distance. Mark commented that a solution to these conflicts could be struck at the contract stage, stating,

I once said that when you're in the countryside and you're having people buy something they should sign off on, you know, what they're getting themselves into. Have the real estate agents do it, but it’s been suggested to me that the real estate industry would never accept that. [I don’t know] whether that’s true or not, but maybe that’s where it needs to come from, right from there. You know, right before you're purchasing it, that you're moving into an agricultural community where such practices are undertaken and you understand that you are doing so.

While this suggestion is logical, the feasibility of requiring real estate agents to acknowledge the implications of adjacent agricultural activities or force new residents to sign off on such an acknowledgement would be difficult, as the real estate industry is provincially regulated. Considering this, a municipal regulation related to agriculture could not be enacted.

The second solutions farmers suggested places the onus of responsibility on residents to educate themselves before they move into an agricultural community. Agriculture in Niagara-on-the-Lake generally follows best management practices and the equipment used and activities conducted are all deemed normal farm practices by OMAFRA. Considering that agriculture in this community is not abnormal, farmers believe that residents should be informed before moving to this area so that they cannot complain about standard farm activities. Rob, for example, compared residents who move to a farm area and complain about noise to people who move in next to an airport or railway and complain about the noise. Complaining about an obvious land use, then, was deemed unfair and unnecessary. All of the farmers interviewed agreed that residents
should research the community before they move and fully prepare themselves for all aspects of agriculture, considering this industry is not going to disappear. Dave reinforced the importance of education, stating the necessity of “making them aware as to what they see here and the effort it takes, what are normal farm practices. What’s normal? Spraying is normal, spreading manure is normal, cultivating is normal, dusty days when it’s dry, irrigating, all those things, those are normal.” Conflicts that arise over normal farm practices could potentially have been avoided if residents were better informed of the nature and necessity of these activities, thus reducing future impacts of residential development on farmers.

Education plays a significant role in mitigating conflicts and reducing the potential issues that arise over a lack of understanding. When the wind machines were first installed in Niagara-on-the-Lake, OMAFRA organized an educational campaign informing residents of the importance of these machines and how they should be operated. Through town workshops and an information flyer printed in The Niagara Advance and attached in Appendix 8, residents were provided many opportunities to gain understanding through education. Many farmers attributed OMAFRA’s efforts to educate the residential community as the reason why wind machines are no longer a significant issue within the community. While OMAFRA has a number of fact sheets regarding agriculture, including one entitled “So… you’re moving to the country: Rural Ontario is more than just a pretty place…” and the Niagara-on-the-Lake has one entitled “Bird Bangers”, attached in Appendices 9 and 10, respectively, it is still the responsibility of residents to read them. As the resources are available, encouraging new residents to educate themselves with the plethora of information available is ultimately the challenge.
Finally, the last recommendation provided by farmers was in relation to communication. Many farmers felt the best way to reduce the likelihood of complaints was to engage their neighbours and explain what they are doing. When the wind machines were being installed, Dave discussed alternate approaches remarking that “some of the farmers had parties and said ‘come over, please, come to my house, have a glass of wine and come see. We’ll talk about it and what I’m doing and why, the impact, the economic impact and the risks that we have out here farming.’” This solution was also recommended through the surveys as many respondents professed the importance of open dialogue and communication. One survey responded stated, “dialogue between both parties brings understanding. Both parties need to conform a little and meet half way. Farmers need consumers, consumers need farmers.” Rob reinforced the importance of this relationship, commenting “farming and the housing have always been best friends and worst enemies being in the same room at the same time.” It is true that without consumers farmers would not exist and, without farmers, consumers would not exist; however, the dynamics of this relationship are at times quite strained. This relationship, nonetheless, is imperative to the future of the industry and the supply of food and, ultimately, it is communication that can encourage the development of social capital between both groups. Indeed, open communication between both groups will bring a level of understanding and comradeship; something the agricultural engineer felt was missing from rural communities as new residents move in. This lack of comradeship was also discussed by Jake who remarked, “hopefully you get to know your neighbours and they get to know you and you can resolve these issues as they come up… Communication, communication is the key.” Certainly, the level of camaraderie will
impact communication and the likelihood for conflict, a unique feature of rural communities that needs to be re-established.

One particular benefit of open dialogue would be the understanding of why farmers grow certain crops and why they rely on certain equipment, such as wind machines. Farmers lamented that residents often complain about the need to use wind machines because the grapes that are planted are not suited to this area. Dave, in particular, provided an example of residents not understanding, remarking that,

[People ask] ‘why don’t you grow grapes that don’t need these things?’ Perfect question. When was the last time you bought a concord or Niagara, which was a local grape, bottle of wine? ‘Oh, I don’t buy that anymore.’ Exactly! We’re trying to grow what you will buy, so if you change your habits we could grow things that were hardy; we wouldn’t have to do this, but you're not buying that stuff. You're buying things that are harder to grow. That’s what you want, that’s what consumers ask for, realize that. They don’t know that, so education is huge, people just don’t know.

Dave makes an important point, as imported grape vines from Europe, which are what consumers want for their wine, are harder to grow and require a lot more effort on the part of the farmer. As such, wind machines and certain pesticides become a necessity in order to meet consumer demands, a fact of which residents seem unaware. Changing consumer habits dictate what farmers will grow. Communicating this fact to residents can perhaps alter their preferences or at the very least, encourage a level of understanding.

Policies, Planning and Development Procedures

Beyond education, policies, planning and development procedures significantly impact farmers and the use of their land. Three aspects were recommended by farmers as potential solutions which would limit the potential for conflict and better protect farmers
from adjacent land uses: buffers, the Greenbelt, and the role of OMAFRA. This final section of this chapter will explore the role of these three aspects in resolving residential and agricultural land use conflicts.

To begin, buffers offer farmers a greater separation between adjacent land uses, effectively limiting the exposure of agriculture to nearby residents. The prospect of buffers, however, received mixed responses from farmers as many participants considered them a waste of space. As seen in Table 18, survey respondents were somewhat in support of buffers, although many respondents commented that while a separation is beneficial it is a waste of land and should not come at the expense of the farmer. Mixed responses were also evident in the interviews, as farmers acknowledged the benefits of greater separation but lamented on the feasibility of this option. Dave, for example, felt a buffer would be a good solution, but that it would mean a loss of land for both developers and farmers. Furthermore, he remarked on the complication of such an area, as this space would still be affected by spray and noise. George, alternately, thought buffers would be extremely beneficial but felt such an initiative was too late for many developments within the town, thus making this alternative useless. Rob was more blunt in his assessment, stating, “what would we put in the middle? Would we put farm, or would we put housing? We have to put something. We cannot create wasted land; otherwise, it is a waste of money.” While buffers would be beneficial to offer a degree of separation between agriculture and residents, and generally farmers would appreciate this solution, they are aware of the difficulty in executing this option.
Table 18 - Farmers’ opinions regarding the benefit of buffers between agricultural and residential land uses

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<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased separations between agricultural and residential land uses are needed in Niagara-on-the-Lake</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
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</table>

The second recommendation was related to policy, specifically, the greenbelt and the importance of this policy in protecting farmers. The Greenbelt Act, an important policy protecting farmland and other sensitive landscapes from development, does not go far enough to support agriculture and guarantee the future of this industry. Many survey respondents simply felt the Greenbelt held farmers’ hostage by their land, as it meant the only use for which their land could be designated was agriculture. Mark explained that the only real benefit of the Greenbelt for farmers is that they know there will not be any new lots created for residential development in the countryside. He remarked, “I have enough neighbours, I don’t need any more neighbours, really. I don’t need more people to fight with.” The protection of farmland from the encroachment of residential land is beneficial; however, this legislation alone will not protect farmers from residential complaints or ensure farming remains prominent in Niagara-on-the-Lake. Alternately, as is evident by Table 19, respondents believed that laws protecting farmers from residential complaints are a necessity. These laws then, must go beyond the Greenbelt and effectively ensure that agriculture is supported within the community and the use of agricultural land is not impeded or disrupted by residential complaints.
Table 19 - Farmers’ opinions regarding the Greenbelt local planning policies and protection against residential complaints

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The provincial <em>Greenbelt Act</em> and Regional Municipality of Niagara’s Urban Area Boundaries protect farmland from residential development</td>
<td>4</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Current local planning policies protect the needs of residents more than the needs of farmers</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Laws that protect farmers and the use of their land from residential complaints are necessary</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>-</td>
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</table>

The final recommendation farmers provided regarding the impacts of residential land uses on agriculture was related to OMAFRA. Farmers, specifically, felt that as OMAFRA has been decimated and its prominence in politics reduced, agriculture has suffered. In particular, Mark commented on the lack of support provided by OMAFRA stating,

"OMAFRA sits on their hands because they’ve been gutted so much. I believe there is a directive that ministries don’t fight each other. [Ministry of the Environment], [Ministry of Natural Resources] take the lead and our food production people just sit there. Well come on, speak up for us. I’m getting tired of that and I’m getting really tired of them. They don’t explain to the city where their food comes from, but again, we’ve got 0.5 percent of the provincial budget. What’s health[care]? If you are what you eat, don’t you think we’ve got this a little sideways?"

Mark raised an interesting point, considering the importance of health care and the fact that health is directly related to food, a greater importance should be placed on protecting our food supply and, therefore, farmers. Jake also commented on the importance of food security, rationalizing that the reason why Canada’s food policies do not protect the farmer or food production is because, as a nation, we have never starved. If we consider, then, that OMAFRA is the only significant government representative farmers have, their diminished role significantly impacts the future of farming, food production and,
therefore, food security. The agricultural engineer from OMAFRA supported this stance, acknowledging that farmers do not have enough advocates and have little political power remaining. This is quite unfortunate as the farming community becomes a marginalized group through their diminished role, and their lack of a champion fighting for their cause means protection from the impacts of adjacent land uses is rather unlikely.

Solutions related to education appear to be the most important option in reducing the instances of resident complaints regarding normal farm practices. As farmers continue to operate according to best management practices and with equipment deemed normal by OMAFRA, it appears that education is pivotal. If education, in coordination with open communication between residents and farmers occurred or was encouraged, many nuisance-related complaints could more easily be mitigated. Policies and government directives, however, cannot be as easily remedied, as the scale of these solutions moves from local to provincial. While planning initiatives, such as buffers, can be attained locally, their potential impact is limited. Alternately, government legislation and a greater presence in OMAFRA would have the largest impact on reducing, if not eliminating, many of the impacts generated by residents.

**Conclusion**

This chapter sought to understand how farmers are impacted by residential development and how these impacts can be mitigated. Before exploring these aspects, I first analyzed farming in Niagara-on-the-Lake to gain an understanding of the level of appreciation for agriculture and future of this field in the community. Interestingly, farmers did not feel appreciated within the community and a rather divided opinion on the future of farming was provided. This division, as is evident throughout much of this
chapter, appeared to be between tender fruit growers and grape growers. As the future of agriculture within Niagara-on-the-Lake is likely to be in relation to grape production for wine, tender fruit growers may feel stymied by this prediction.

A second significant finding was in relation to how farmers are impacted by complaints generated by residents. In particular, resident complaints to government agencies regarding normal farm practices impact a farmer’s efficiency. Interestingly, farmers take a variety of proactive measures to help mitigate or avoid instances of conflict, in an effort to appease adjacent residents. These measures are important as they demonstrate the farmers understanding of the importance of compromise when dealing with nuisance inducing activities to maintain a level of harmony. While being proactive is an important aspect of these conflicts, they complicate farmers’ activities and negatively impact efficiency.

This chapter also argued that one of the most pivotal factors in reducing conflict is related to education and communication. In particular, educating residents on the nature of adjacent farming activities can reduce the instances of complaints or ensure that residents uncomfortable with farming activities do not move into this area. In addition to education, open communication between farmers and residents was also an important component in reducing conflict. Simple dialogue between these groups may have the potential to effectively reduce hostility, thus diminishing the occurrence of conflicts.

Finally, the importance of policy and the presence of government organizations protecting and supporting rural agriculture were also considered imperative in reducing the impacts of residential development on agriculture. In particular, it was suggested that OMAFRA’s diminished role has negatively impacted farmers and the future of
agriculture, ultimately reducing food security. The future of agriculture within Niagara-on-the-Lake may be negatively impacted by the weakened role of OMAFRA, as farmers lack a champion fighting for their cause. With inadequate policy direction and intermediary government agencies that appear to be in opposition with farmers, it is unclear if the needs of farmers will be acknowledged, their rights protected and their role supported.
Chapter 6
Mitigating Land Use Conflicts Through Planning Policies

The conflicts associated with residential and agricultural land uses have, at times, been both mitigated and aggravated by planning policies. For example, the encroachment of residential development adjacent to agricultural landscapes has been guided and encouraged by Ontario’s Places to Grow Plan. Perhaps more controversial, the Greenbelt Act protects sensitive landscapes, including agricultural areas within the Niagara Region, from development unrelated to farming. The limitations imposed by these policies effectively restrict the land uses to agricultural purposes including those considered secondary to agriculture. The implications of these restrictions mean that agricultural land cannot be redesignated as residential or any other land use not related to farming, effectively limiting the developmental potential for this land. While such protectionist legislation is beneficial, restricting the rights of private property owners, in particular, a farmer’s use of their land, has been met with great opposition. Considering the consequences of this legislation on land use conflicts, the following section will explore how planning policies have mitigated such conflicts. Specifically, it will analyse the impacts of previous, present and future planning policies, including: the impacts associated with retirement lots; current smart growth initiatives and the greenbelt; and lastly, the future role of provincial and local levels of government.

Previous Planning Policies: Retirement Lots

Conflicts between agricultural and residential land uses are not strictly contained within the urban area boundaries of Niagara-on-the-Lake, but, instead, have proliferated throughout the countryside. The influx of rural, non-farm residents to the countryside has been facilitated by the availability of small, developable lots adjacent to active farmland.
These lots, originally severed from the abutting farm, were contrived with a belief that upon retirement, the farmer would have a plot of land on which to build a house in order to remain close to their farm. Unfortunately, for many farmers these “retirement lots” became a source of income and were often sold to nonfarm families as a place to build a rural country estate (Gayler, 2010a). This previous planning policy, which has since been eliminated, has had lasting repercussions for farmers in Niagara-on-the-Lake; development of the countryside has resulted in an increase of rural non-farmers living in close proximity to farmland. Complaints associated with the sights, sounds and scents of agriculture are no longer limited to fringe developments within the urban area boundaries, as existing retirement lots are developed and the countryside quickly becomes more populated. Both farmers and the former MOA spoke on the futility of retirement lots, explaining that while they were beneficial for farmers, the lasting effects of such planning decisions were unforeseen and, now, irreversible. As a result of this previous planning policy, farmers throughout Niagara-on-the-Lake are forced to deal with land use conflicts that were originally limited to fringe development.

**Present Planning Policies: Smart Growth Initiatives and the Greenbelt**

The provincial government has created planning policies in an effort to stop the encroachment of sprawling development onto unique environmental landscapes, such as agricultural land. This section will address two significant policy directions, the first, aimed at limiting and designating growth and the second at protecting landscapes threatened by development.
Limiting and Designating Growth

In an effort to quell sprawling development and protect environmentally sensitive land throughout Ontario, the provincial government created two distinct planning policies in 2005. The first policy, *Places to Grow*, is a smart growth initiative that dictates where growth should occur by delineating urban growth centres with specific density targets. This policy and the subsequent *Growth Plan for the Greater Golden Horseshoe* were intended to eliminate urban sprawl and protect farmland by designating certain areas for residential growth (Ministry of Infrastructure, 2006). Within the Niagara Region, St. Catharines was designated an urban growth centre, ultimately directing and encouraging development within the Niagara Region to this city. This reduced the pressures associated with residential growth on adjacent rural communities and helped ensure that, through intensification goals and public infrastructure, population growth within the Niagara Region was to be encouraged in the city of St. Catharines (Gayler, 2010b). Such a plan was a proactive government policy as it intended for development to be contained within an urban environment. St. Catharines, the largest city within the Niagara Region already had much of the infrastructure needed for such development and helped protect rural Niagara from developmental demands.

This growth plan also outlined specific areas of urban development within rural communities, called settlement areas. Settlement areas were devised in an effort to curb sprawl in rural locales and contain development within defined growth boundaries. The Region of Niagara, in coordination with these policies, and under the direction of the *Provincial Policy Statement*, a policy that required municipal plans to be consistent with provincial planning legislation and a policy, which also recognizes the importance of
agriculture, created the *Regional Niagara Policy Plan*. This plan, in particular, designated settlement areas within each of the twelve municipalities, defining urban area boundaries where residential growth would take place, thus eliminating sprawl. In Niagara-on-the-Lake, settlement areas, as depicted in Figure 15, were designated in Virgil, Old Town, St. Davids, Queenston and Glendale, ensuring that residential development only occurred in these areas. The designation of such settlement areas is of particular importance, as these policies ensured that development within rural communities was confined to settlement areas, subsequently curbing sprawl and halting the loss of agricultural land outside of these boundaries.

These policies can be viewed as beneficial as they eliminated a farmer’s ability to create retirement lots, thus ensuring that agricultural land was not subdivided into parcels for development. The elimination of retirement lots can be viewed as a necessity as they
were not developed as initially conceived and instead, through the sale of such lots to non-rural farm families, seemingly supported residential sprawl into the rural countryside. In addition, agricultural land outside of the settlement area cannot be rezoned to residential, ensuring that new residential lots are limited only to settlement areas. It is important to note that while no new residential lots can be created in rural Niagara-on-the-Lake, many previously severed or rezoned undeveloped lots still remain. These remaining undeveloped lots, retirement lots in particular, are still a threat to rural farmers as they continue to ensure that residential development outside urban growth areas will occur. The availability of such lots is depicted in Figure 16, where presently cultivated farmland that was rezoned prior to the enactment of *Places to Grow* legislation, is destined for residential development.

![Figure 16 - Stricter planning policies have not eliminated residential development near or on existing agricultural land](image)

**Protecting Sensitive Land: The Aggravation of the Greenbelt Act**

The second significant policy devised to protect sensitive landscapes from development was the *Greenbelt Act*. The Greenbelt consists of 1.8 million acres of protected environmentally sensitive land, including the Oak Ridges Moraine, Niagara
Escarpment and agricultural land along the south-western shores of Lake Ontario (Ontario Ministry of Municipal Affairs and Housing, 2008). For Niagara-on-the-Lake, the Greenbelt Act means that any agricultural land outside of the designated urban area boundary is protected from development. While the protection of agricultural land is important, across the Region this policy received great opposition from farmers who “felt betrayed by government, misunderstood by urbanites, and expected to subsidize those urbanites who enjoyed the countryside aesthetic in different ways” (Gayler, 2010a, 320).

In particular, the greatest concern farmers held regarding the Greenbelt Act was that it did not consider the economic feasibility of agriculture, as it protected the landscape but not the farming industry (Macdonald & Keil, 2012). As one interview respondent stated, farmers make their money through the appreciation of land values and the Greenbelt eliminates the potential income associated with selling the land. Considering that the Greenbelt Act allows only agricultural activities to occur on agricultural land, farmers have a limited pool of buyers, resulting in a value for their land that they perceived to be negatively affected. Without additional support services in place, the Greenbelt Act is generally not welcomed within the agricultural community and does not mitigate land use conflicts.

For farmers, it appears that the Greenbelt has aggravated many issues within the agricultural industry beyond land use conflicts. According to the former MOA, municipalities already had strict planning policies in place restricting the development of agricultural land. The creation of the Greenbelt, then, was viewed as aggravating a sensitive topic within the agricultural community, as similar policies were already in place. Mark understood the political implications of this policy, stating “the Greenbelt is
just a fancy word for good planning. Really, that’s what it is. Everybody in Toronto and Queens Park feels warm and fuzzy just because they’ve got a Greenbelt.” Farmers, it seems, are aware of the political implications of the Greenbelt, but as was evident from participants, without the support of various government agencies, the Greenbelt provides little benefit to farmers. The view that the Greenbelt is rather insignificant amongst urbanites in regards to agricultural uses was explained by Jake. He stated:

What does the greenbelt mean to 99.9 or 98 and a half percent of the country? It means green open space where animals can be. To the other two or whatever we are in agriculture, it means agriculture. That’s what we’re trying to protect. People in Toronto, you would be lucky to find someone who says we’re trying to protect agriculture.

If the Greenbelt does not represent agriculture to the majority of the province, farmers believe that their industry is not supported and, ultimately, they consider the Greenbelt to be a nuisance. Throughout much of the agricultural countryside, the Greenbelt is seen as representing top-down planning policies where the urban majority dictate to the rural minority. These top-down planning policies and belief that a farmer’s individual rights were lost have unfortunately, resulted in aggravation amongst the farming community.

Beyond the meaning of the Greenbelt, farmers also detailed two significant complications associated with this Act. First, the Greenbelt Act blanketed all agricultural areas as protected, regardless of the quality of the soil. Within Niagara-on-the-Lake this has meant that less productive areas, or plots of land that do not support tender fruit crops, are protected regardless of their inferiority. Conversely, agricultural land within the urban area boundary that is of greater value to farming is destined for development due solely to its location. Survey respondents also felt that agricultural land within the urban area boundary was at risk of being converted, with 88 percent of respondents
agreeing or strongly agreeing with this statement. Ultimately, the blanketing of the
Greenbelt across rural Niagara-on-the-Lake will result in valuable land being lost and less
desirable land remaining fallow due to location and generalizations.

Secondly, the Greenbelt Act also dictates rules regarding farm severances and lot
sizes. At a minimum, if specialty agricultural land is to be severed in Niagara-on-the-
Lake, both resulting farm parcels must be a minimum of 40 acres. Such a policy is
unrealistic in Niagara-on-the-Lake, as the average farm size is only 55 acres (Regional
Municipality of Niagara, 2010a), making severances impossible. Dave acknowledged the
impossibility of severances in Niagara-on-the-Lake due to the uniqueness of agricultural
within the community. He stated:

It’s supposed to be a 40-acre minimum when you have a severance. You can take 80 acres and cut it in half, but what do you do with a farm that’s 30 acres? We’re specialty [agriculture], we’re high intensity, we make as much money as they do on their 40 as we do on 10 acres. So, the rules don’t apply for us or in Niagara-on-the-Lake specifically, so that’s where that doesn’t fit. So there's some, there needs to be some modification, there needs to be some sensitivity to intensive horticulture which is not there right now.

While the town’s agricultural industry may rely on small lot sizes, the dominance of
intensive horticulture throughout the community has proven to be quite successful. As
such, the general protective policies applied to Niagara-on-the-Lake’s countryside are not
consistent with such a unique agricultural region. Ultimately, the Greenbelt Act can be
viewed as a policy that has aggravated the agricultural community, in turn magnifying
conflicts associated with competing land uses within Niagara-on-the-Lake.

Future Planning Policies: The Provincial and Local Connection

If the conflicts associated with agricultural and residential land uses in Niagara-
on-the-Lake are to be resolved, improved policies that better mitigate these issues are
needed. As such, this section will explore how provincial and local policies can minimize the instances of conflict between agricultural and residential land uses through stronger planning policies.

**Reducing the Greenbelt and Increasing OMAFRA**

While the goal of this thesis was not to understand how the *Greenbelt Act* impacts farmers or how farming can be made a more viable industry, these topics consistently arose throughout the survey responses and interview discussions. The implications of these topics are that farmers are generally not appreciated or supported within the province and conflicts related to residential land uses are another example of the challenges farmers must face. This lack of appreciation and onslaught of challenges are believed to be unstoppable unless greater support is provided from the provincial government. With this understanding, future solutions hinge upon a revitalized role of OMAFRA and further support from the province. As many participants have noted, the role of OMAFRA has been significantly decreased in recent years, leaving farmers without a strong government organization to protect them. While OMAFRA was consistently present when dealing with the wind machine ordeal and can be credited with mitigating this conflict and resolving this issue through education, such a presence is no longer maintained. While this reduced presence cannot be blamed on OMAFRA, the provincial government must understand the critical role this organization played in resolving the wind machine conflict and potential role they may play in resolving future conflicts. Often acting as a support system for the farmers, OMAFRA needs to be reinvigorated in order to continue educating residents, protecting the needs farmers and ultimately limiting the potential for conflicts.
The understanding that farmers desperately need support was also evident when discussing the implications of the Greenbelt. While the Greenbelt has been viewed as a policy that has aggravated the agricultural community, it is nonetheless a beneficial planning policy. The provincial government, however, needs to recognize that the future of agriculture within rural areas cannot be guaranteed solely by protecting the landscape. Indeed, as many farmers have elaborated, the Greenbelt does not guarantee that farming will continue; instead, it only ensures the land will be available. As such, farmers need supporting policies that will help ensure their farms are viable. While subsidies are beneficial, support must go beyond this, with policies devised to ensure the longevity of agriculture. If policies stop aggravating farmers, conflicts regarding land use may be more easily resolved as a perceived level of fairness is restored.

**Plans of Subdivision: Educating and Regulating**

At a local level, policies related to planning could significantly mitigate land use conflicts. To begin, educating potential residents regarding farming activities was strongly recommended by both groups of participants. Interestingly, through a plan of subdivision, houses adjacent to agriculture have a clause detailing the nature of nearby farming activities. The plan of subdivision would be registered on title and every lot would have the conditions of the plan of subdivision attached to them, thus informing potential new residents of the nature of nearby agricultural activities. The Town’s Development Coordinator reiterated this stating,

> Basically your fringe developments, there’s usually conditions tagged that within the subdivision agreement there’s a restrictive covenant or clauses placed within, that specify that there’s odour, noise, agricultural dust, etc. [It’s] included in that subdivision agreement, so that purchasers are aware that there is an agricultural operation within the vicinity and they are going to be subject to that.
Ultimately, when a property is purchased, the purchaser’s lawyer would be required to inform the potential owner of the clauses attached to the plan of subdivision, including the nature of the adjacent agricultural activities. Therefore, new residents within these fringe developments are made aware of the nearby agriculture and should not be offended by it. As many residents seemed to understand the nature and importance of nearby agricultural activities, registering this clause to the property titles has been a positive tool for the prevention of land use conflicts.

While registering an agricultural clause to a property’s title is beneficial, this research has made it apparent that many of the conflicts arising over agricultural activities are not strictly limited to the urban area boundary and, instead, are common amongst rural non-farm residents who do not have such clauses attached to their property. As such, council members need to ensure that the protection of agricultural practices receives prominent attention. Considering that normal farm practices are under the jurisdiction of OMAFRA and the town cannot create policies restricting normal farm practices, they need to publicize this limitation. Recently, Niagara-on-the-Lake has been revitalizing its noise by-law and, in doing so, heard many concerns from rural residents requesting stricter rules limiting the use of bird bangers. As the town was aware that it lacks jurisdiction over this activity, it did not alter any bird banger policies, leaving many residents, who were unaware of OMAFRA’s role, angry with Town Councillors (see Appendix 10 regarding the Town’s authority related to bird bangers). Given the unnecessary conflict that arose, the Town needs to ensure that residents are better informed over their authority regarding agricultural activities. If residents understood that the Town has limited power in regulating agricultural activities, it is possible that
residents would not expect drastic alterations to nearby farming practices and therefore, would reduce the occurrence of conflicts.

Finally, policies related to the separation of agricultural and residential land uses may be beneficial to reduce the potential for future conflicts. Buffers, which would encourage a separation between agricultural and residential land uses, would help eliminate the potential for future conflicts. The greater the separation between these two land uses, the less likely each group is to be impacted by the other, thus eliminating the potential for conflicts. The creation of buffers is hindered, however, by the fact that they can only be created with new developments that are still in the planning process. In the case of Cannery Park, a large development in St. Davids that is adjacent to farmland, a buffer may prove beneficial to shield residents from nearby agriculture. In instances where residential developments already exist adjacent to farmland, large buffers would not be feasible. Alternately, living buffers, such as evergreen trees, were recommended by farmers to absorb spray drift and noise, which would help protect nearby residents from certain farm practices. A similar complication arises with rural non-farm residents living adjacent to farmland as they are dispersed throughout the countryside and are not limited to suburban developments. Given the dispersion of rural non-farm residents, the creation of buffers throughout the countryside is not practical.
Ultimately, the creation of buffers between agricultural and residential land uses would be beneficial in new residential developments before the construction process begins. While current planning policies dictate that minimum separation distances between new residential developments and adjacent farmland must be met, larger buffers, including tree stands, could become a clause within any plan of subdivision as a mitigation tool. Additionally, farmers generally agreed that buffers would be beneficial
and acknowledged that such a requirement would only be feasible when dealing with a new development. Considering this, requiring developers to create living buffers, such as a stand of evergreen trees, could prove beneficial in reducing the potential for complaints in new residential developments.

**Conclusion**

Planning policies have unwittingly both mitigated and aggravated many land use related conflicts within Niagara-on-the-Lake. Perhaps the largest aggravator, the *Greenbelt Act* left farmers feeling violated and taken advantage of, a sentiment that has impacted the resolution process. Lingering feelings of distrust and resentment have complicated many of the instances of conflict, as farmers feel bullied and outnumbered during these conflicts. The seeming lack of support from the provincial government through the Greenbelt and reduction in OMAFRA’s role have heightened this sense of victimization. As such, conflicts can become bitter as the minority group of farmers are pitted against the significantly larger group of residents.

It appears, then, that policies that mitigate land use conflicts are needed at the planning stages of development. As agricultural activities in Niagara-on-the-Lake are deemed normal farm practices by OMAFRA, a proactive mitigation technique may be utilized by ensuring residents are aware of the nature of adjacent farm practices. Through clauses registered to a property’s title, it appears that the Town has taken a proactive educational measure; however, the existence of rural non-farm residents complicates these measures as such clauses cannot be registered to these lots. Ultimately, making residents aware of the limited role Town Councillors play in regulating farm activities may help alleviate the false belief that by-laws can be enacted to halt certain practices.
Finally, the creation of living buffers or greater separation distances between new residential developments and adjacent agriculture can help reduce the potential for conflict. While minimum separation distances currently exist, increased distances would be beneficial, as they would further reduce the noises, sights and scents of nearby agriculture. Considering that many farmers deemed a greater separation between land uses to be a waste of land, living buffers, which take up less space while still providing a separation of land uses, would likely be a favoured solution.
Chapter 7
Lessons: Acknowledging Mistakes and Implementing Solutions

One of the goals of this research was to identify lessons that can be gleaned from current land use conflicts and applied to future development within Niagara-on-the-Lake. Residential development within the town is currently underway and applications for proposed subdivisions are common. These subdivisions, both under construction and in the planning stages, are, given Niagara-on-the-Lake’s landscape, in close proximity to active agricultural land. As such, conflicts are bound to occur when new residents who are unaware or unprepared for the rural agricultural lifestyle move into these communities. In an effort to alleviate the potential of such conflicts, this research has sought to understand how both residents and farmers are impacted by adjacent development and how policies have mitigated or aggravated these issues. This chapter will explore the lessons gained from this research and provide recommendations for future residential development. It will begin with an exploration of planning related measures, in particular, the creation of buffers to separate future residential development from adjacent agricultural land uses. Secondly, policies related to the protection of agricultural land and planning legislation will be revised, to offer a lesson regarding the future of agriculture within Niagara-on-the-Lake. Lastly, this chapter will also explore proactive measures that can be taken to reduce existing tensions between residents and farmers, which consume the town.

Buffers: Shielding Farmers and Sheltering Residents

Residential development within Niagara-on-the-Lake takes place in close proximity to agricultural land uses and, in many cases, is directly adjacent to active farmland. This adjacency between residential and agricultural land uses has resulted in
conflicts, as residents do not condone specific farming practices. In particular, this research has found that while residents understand the necessity of noise generating equipment, such as wind machines and bird bangers, the use of spray pesticides and fertilizers has become a significant source of tension. Residents fear the health impacts of such chemicals, most often in communities dominated by young families. The creation of extensive buffers, those that go beyond the construction of a fence, would limit spray drift and reduce this source of conflict. Mirsa et al. (1996), for example, found that natural landscape buffers can reduce the concentration of herbicides by upwards of 45 percent. Such results are promising, considering the use of spray pesticides and fertilizers received the greatest level of concern from residents. The use of vegetative buffers, which could potentially reduce the concentration of chemicals in the air surrounding farmland, is a promising solution and, therefore, a lesson that should be considered with new residential developments.

The creation of buffers in Niagara-on-the-Lake, however, was generally not supported by the farming community. This lack of support can be attributed to the farmer’s belief that buffers would be created on their land, thus removing productive farmland and infringing on a farmers use of their property. While farmers agreed that a buffer is beneficial and would likely reduce complaints related to spray and noise, they do not condone the use of their land for this option. The lack of support of buffers on farmland by the agricultural community is not uncommon, as Sullivan et al. (2004) found that while residents strongly supported the creation of vegetative buffers on farmland, farmers were not as receptive to them. Alternately, the creation of buffers on soon-to-be development land was recommended by farmers, as Jake, for example, stated,
I think the people who live there when the developments put in should put up some sort of buffer. Permanent trees of cedar or something tall growing that can help block out things and trap sound as best they can or trap spray from drift’s a good idea.

Jake’s recommendation is legitimate, however; the creation of landscape buffers during the development process would require the Town’s planners to include such a clause in the local Official Plan.

The creation of buffers separating new residential developments from adjacent agricultural land would be beneficial, as farmers would not be impacted and residents would be shielded by undesirable farming practices. While the developer would lose some land, a vegetative buffer, as simple as a stand of evergreen trees, would absorb some spray drift and noise. Requiring developers to create vegetative buffers is common within the Niagara Region. St. Catharines planners, for example, recently required a developer to construct a living wall along a residential development adjacent to a greenhouse.\footnote{This information was provided during a conversation with the city of St. Catharines Planning Manager in October 2010.} This wall is a vegetative buffer designed to absorb noise and spray drift that would otherwise impact the nearby residents. Requiring developers in Niagara-on-the-Lake to construct such landscape buffers does not appear to be an unusual condition and would greatly benefit both farmers and residents. It should be noted that while buffers would shield residents from agricultural activities, it would also impede their view of the vineyard or orchard they initially found quite desirable, thus limiting the appeal of this solution to some residents.
Policy: The Problems with Generalizations and the Importance of Strategizing

Land use policies aimed at directing growth and protecting farmland from the encroachment of residential development have been largely applauded throughout Ontario. While aimed at securing a future for farming within the province, however, these policies have not necessarily protected farmers or the industry. Instead, these protectionist measures have only guaranteed that agricultural land will remain in Ontario with no promise that the land will be productively cultivated and not left fallow. While an unintentional outcome of this research was an understanding that the future of farming in Niagara-on-the-Lake is not secure, a key lesson from this understanding is the impact planning related policies have had on agriculture. While the protection of agricultural land should be commended, the Greenbelt Act is not without conflict; the limitations imposed by this Act have negatively impacted farmers and aggravated precarious planning conflicts. The hardships associated with the Greenbelt have inflamed land use related conflicts and exasperated the farming community.

A prominent issue associated with the Greenbelt Act was in regards to designating all agricultural land protected, regardless of the quality of the soil. In Niagara-on-the-Lake, farmers lamented that large tracts of unproductive, fallow farmland will remain as such, given their low quality soil and designation as protected land. Conversely, high quality agricultural land within the designated settlement areas will eventually be developed due to their location. While the creation of settlement areas on poor quality soil would have promoted sprawling development, the loss of high quality farmland within the settlement area is unfortunate. Greater diligence is needed when designating land within a settlement area or when classifying agricultural land as protected.
Generalizations regarding land uses have been a source of contention within Niagara-on-the-Lake and as such, require greater attention when the Greenbelt Act is reviewed in 2015. Generalizations are not only limited to the designation of protected land and growth boundaries, but are also evident when examining land use policies within the Greenbelt Act. In particular, the act also generalizes severances, requiring the creation of new lots to be a minimum of 40 acres in size. Considering the average farm size in Niagara-on-the-Lake is approximately 55 acres, lot severances would not be possible as in many cases each newly created lot would not meet the 40 acre minimum.

Furthermore, considering that high intensity agriculture does not require large plots of land, this policy does not fit with the character of the town.

The simplistic nature of the Greenbelt Act, whereby general policies were applied to large tracts of land, has not proven beneficial for the farming community. Instead of protecting the farm industry, these policies have created tension and feelings of disenfranchisement amongst the farming community. As a result of these policies, land use conflicts are complex as farmers are already aggravated by government policies that result in a perceived lack of control over their own land. When residents generate conflicts related to agricultural activities, the dominant response from the farming community, as was documented by survey respondents, was “we were here first.” This comment, while accurate, does not aid in conflict resolution; alternately, it portrays an exasperated farming community unable or unwilling to make any more compromises.

Lastly, the creation of the Greenbelt Act as a stand-alone policy aimed at protecting farmland has done little to support the actual industry. This point was brought up by Jake who discussed the purpose of the Greenbelt stating, “[it] depends on what the
inten is. Is the intent to preserve it for the environment, or to preserve agriculture? To preserve agriculture, [you need] to preserve the farmer.” This is the greatest shortcoming of the Greenbelt Act, in that it protects the environment and not the industry. Fung and Conway (2007) have also analysed the impact of the Greenbelt Act, determining that these protectionist measures significantly impact the sustainability of the agricultural industry. If the land is protected but no supporting policies or aid measures are coordinated with the plan, the landscape will remain protected, but the future of the farming industry remains unknown.

As a result of the limitations associated with the Greenbelt Act, it has become evident that in order to encourage farming and ensure the longevity of this industry within Niagara-on-the-Lake and similar rural areas throughout the Greenbelt, support policies need to be enacted. Farmers need to be supported by the government so that the aggravation associated with the Greenbelt is diminished and tensions related to development are eased. As the agricultural industry is largely threatened by increased competition associated with globalization and the industrialization of certain farming sectors, policies that limit a farmer’s rights and provide no support will further endanger this sector (Daniels & Bowers, 1997). Ultimately, the greatest lesson associated with the Greenbelt Act is the necessity of creating multiple strategies that work in coordination to not only protect the environment, but the industry as well.

**Education and Communication: The Importance of Dialogue and Understanding**

The final lesson gained from this research relates to educating residents about the nature of agricultural activities in Niagara-on-the-Lake and encouraging open dialogue between residents and farmers. To begin, caveat emptor, or buyer beware was a phrase
constantly provided by both residents and farmers. The understanding that it is the buyer’s responsibility to become informed of adjacent land uses and the nature of the activities that may take place was a prominent theme. While this presumption is relevant, it does not provide an adequate solution to current conflicts, nor will it eliminate future conflicts. The solution then, is to ensure that both current and future residents become educated as to the type of community Niagara-on-the-Lake represents.

Educating prospective residents must be done in coordination with real estate agents to ensure soon-to-be residents are properly informed. It is impossible for the Town to be responsible for educating these residents as the planning department already registers a clause on the title of the property regarding the nature of the adjacent agricultural land use. Involving the real estate community is an approach strongly recommended by OMAFRA’s agricultural engineer and is a logical solution. Educating perspective residents could be as simple as distributing fact sheets already created by OMAFRA and easily accessible online. While this approach is complicated by the economic motivations of real estate agents and the potential for such information to discourage home sales, it is an important step in reducing the potential for conflicts. If the relaying of such information became a legal requirement, real estate agents would be held accountable and the probability of uninformed residents moving to Niagara-on-the-Lake would decline. The reverberations of such a policy are grand, as resident complaints regarding normal farm practices would be unfounded within the community. If residents are aware before they move to the town that such complaints are unacceptable and that these farm practices are not only normal, but also encouraged within the community, the majority of complaints would cease. Niagara-on-the-Lake is an
agricultural community and as such, farming activities are commonplace and the industry is largely respected. As such, prospective new residents should be aware of the nature of farming activities and the prominence of this field within the community. While such information may discourage some potential residents from moving to Niagara-on-the-Lake, the loss of these residents would be insignificant; other residents who appreciate the agrarian landscape and chose the town for this feature would easily take their place.

Educating existing residents could also be done in coordination with OMAFRA, as their wind machine education campaign was extremely successful. Educating residents about the importance of wind machines and the necessity of this equipment within Niagara-on-the-Lake largely resolved this conflict. Through open houses and the publication of information related to wind machines, residents began to understand that this activity was permanent and was considered a normal farm practice by OMAFRA. If OMAFRA had not taken a proactive measure to educate residents on this equipment, the conflict could have grown, resulting in a substantial divide between residents and farmers. As was evident from the resident survey, noise generating farm equipment is not a significant concern and, for the most part, residents understand and accept these activities. The use of spray pesticides and fertilizers, however, did not receive very much support from residents and, instead, was their largest source of concern. Given this new source of conflict, an educational campaign, perhaps conducted by OMAFRA, may resolve this issue. Most farmers felt the use of pesticides was a necessity and one farmer elaborated on the source of this conflict, stating, “educate the public with science, not propaganda…let science rule our media, not voodoo scare tactics.” It is clear that as the use of fertilizers and pesticides are deemed normal farm practices and used throughout
most the farming community, educating the public may help alleviate the fear associated with this activity. Indeed, in the case of younger families, especially in Pallek Estates, it appeared that fear and a need to protect their children fuelled the conflict regarding pesticides and fertilizers. Education ultimately plays a significant role in conflict resolution and unless an attempt is made to educate residents regarding the use of pesticides and fertilizers, it appears this conflict will continue and potentially intensify.

The final lesson garnered from this research study is in regards to the importance of communication between farmers and residents. Open dialogue is especially imperative between farmers and rural non-farm residents as these residents are completely dispersed throughout the agricultural landscape and are not limited to specific residential developments. While rural non-farm residents would not have a disclosure clause attached to their property’s title, and caveat emptor logic will not eliminate conflicts, it is important for farmers to engage with their neighbours. Complicating this dialogue is the vast spaces across which rural non-farm residents are located. In the settlement area, a high proportion of residents are confined to a limited space; however, in the countryside, residents are much farther dispersed and contacting each homeowner is a more complex process.

Communicating with both groups of residents was a recommendation volunteered by the farmers interviewed. Of particular importance, each farmer detailed proactive measures they took to ensure their neighbours were minimally impacted by their activities. Interestingly, each farmer was diligent when spraying fertilizers or pesticides as they would often notify their neighbours or wait until wind conditions were more favourable. Furthermore, if farmers in Niagara-on-the-Lake are typically taking such
proactive measures, including communication and modifying their activities, it appears that residents need to become more accepting of the farm practices. Alternately, perhaps residents need to communicate openly with their farm neighbours to better understand these activities and the measures farmers are currently taking. While it is likely that the conflicts associated with the spraying of pesticides and fertilizers will likely continue, communication between both parties may reduce the intensity and rate of these complaints.

Beyond the issue of pesticides and fertilizers, some farmers also communicated openly with their neighbours when the wind machine conflict began. In particular, Dave explained that many wineries and vineyards throughout Niagara-on-the-Lake invited neighbouring residents over to discuss the issue and understand the farmer’s perspective. While such open dialogue did not take place with every farmer using a wind machine, this proactive stance may have alleviated some residents’ concerns as they began to appreciate the circumstances a farmer faces. Agriculture is not a simple industry, as it depends on the complexities of science and engineering to ensure optimal crop production, an insight that is not commonly understood. Given the complexity of this industry, communicating openly with nearby residents may be the most valuable lesson gained from this research. Furthermore, the lack of open communication between farmers and residents implies that social capital, in particular bridging social capital, is low. Strong social capital within the community would encourage dialogue between both groups and increase levels of trust; two aspects that are desperately needed within this community.
Conclusion

Future residential development within Niagara-on-the-Lake will result in conflicts regarding adjacent agricultural land uses unless planning policies are adjusted, residents are educated, and open communication occurs. Specifically, planning policies must address the benefits of vegetative buffers, which visually separate residential developments from nearby agriculture. In particular, these buffers absorb various scents and spray drift, reducing the potential for conflict while shielding adjacent residents. Requiring developers to erect such buffers ensures farmers do not lose their land to these barriers, while helping to protect future residents. Such policies are common in other municipalities within the Niagara Region and considering their successes with buffers, should be utilized within Niagara-on-the-Lake.

The second significant lesson revealed through this research are the limitations associated with current Greenbelt policies and the resulting frustration and disenfranchisement felt by the farming community. As farmers are forced to accept the seemingly unfair limitations imposed by the Greenbelt Act, their willingness to aid in conflict resolution diminishes as their frustration mounts. In order to better engage the farming community, policies related to the generalization of protected farmland need to be addressed when the Greenbelt is reviewed in 2015. Furthermore, a policy without a supporting strategy cannot be optimized and, as such, the Greenbelt Act and, ultimately, farmers, need greater support if agriculture is to remain viable.

Lastly, both farmers and residents discussed the importance of education and communication, insinuating that conflict resolution may hinge on these two recommendations. First, potential new residents must be informed of the nature of
nearby agricultural activities to eliminate new sources of conflict. Second, existing residents must be educated on current farm practices, in particular the use of spray fertilizers and chemicals, to reduce the tensions currently associated with this activity. As the educational campaign utilized for the wind machine conflict was an overwhelming success, similar measures should be taken with current and future sources of conflict. Finally, communication between farmers and residents needs to be encouraged in order for each group to understand the needs of the other. Farmers need to continue their proactive measures of consideration in regards to spraying and maintain this level of empathy. Residents, conversely also need to engage farmers by understanding their activities and acknowledging the importance of such practices. Through education and communication, conflict resolution can occur in Niagara-on-the-Lake, social capital can be strengthened and ultimately, instances of conflict can be reduced or, ideally, eliminated.
Chapter 8
Conclusion: Overcoming Conflict

The goal of this thesis was to understand the implications of residential development in rural agricultural landscapes. Furthermore, through an understanding of the conflicts that often arise between these two competing land uses, I sought to understand how legislation mitigated these conflicts. Through an understanding of these two goals, I proposed lessons, which should be applied to future residential developments occurring in close proximity to agricultural land uses. I will revisit these three topics in this concluding section, in order to reaffirm the arguments I have made.

Residents: Caveat Emptor, Education and Appreciation

The appeal of the rural idyll has attracted residents who desire a quieter lifestyle and high quality-of-life to Niagara-on-the-Lake. The desire to live within this amenity rich region is not diminished by the adjacent agriculture but, instead, is often a motivating factor for many new residents. This proximity to agriculture, however, was not always viewed as beneficial, as conflicts related to agricultural activities often arose, reducing some residents’ quality-of-life. Historically, noise-generating farming practices were the greatest source of conflict as, in the case of the wind machines, their use during the overnight hours often disrupts sleeping patterns. Surprisingly, wind machines no longer appear to be a source of conflict, as residents understand the necessity of this equipment and accept their use.

Alternately, the spraying of pesticides and fertilizers were viewed as a source of conflict, particularly in the predominantly family-oriented neighbourhood of Pallek Estates. Spray pesticides and fertilizers were viewed as dangerous chemicals and were thought to possess a significant threat to the health of adjacent residents. This view was
most commonly expressed as fear through a need to protect children from the hazards of this activity. While organic agriculture has slowly started to appear in Niagara-on-the-Lake, it is unlikely that this form of farming will dominate the local industry and eliminate this source of conflict.

It is important to note that while residents did not support certain farming practices, many felt that agriculture needed to be protected and supported within this community. This sentiment is important, as it recognizes a level of understanding amongst residents that this industry is significant within Niagara-on-the-Lake and should not be hampered due to resident complaints. Residents of Carriage Court Estates and Shaw’s Lane most strongly supported such views, as they appeared to recognize that agriculture predates residential land uses and should be supported rather than undermined. This level of support amongst residents was not anticipated but instead, implies a level of acceptance amongst residents within the urban area boundary.

Farmers: The Invasion of the Countryside and Proactive Measures

Agricultural restructuring has forced farmers in Niagara-on-the-Lake to become resilient against the forces of globalization as the nature of their industry has been restructured. Given the complexity associated with this restructuring, conflicts related to residential land uses have further complicated the essence of farming. While the impacts of residential land uses on farmers are not as well documented in the community’s newspaper, this research provided farmers the opportunity to express their concerns. Disappointingly, many farmers did not believe that agriculture was appreciated in Niagara-on-the-Lake, nor did they foresee a strong future for this industry within the town. Adding to this lack of positivity was the finding that the farming community was
not a cohesive unit, as divisions seemed to exist regarding the acceptability of certain farm practices. The use of wind machines appeared to be a contentious topic and hinted at a fissure between grape and tender fruit growers.

When discussing the impacts of residential development on agricultural land uses, farmers appeared more united and overwhelmingly believed that existing residential development created problems for farmers. A key finding related to retirement lots and the proliferation of rural non-farmers in the countryside. These residents are immersed in the agricultural landscape, considering that agriculture dominates the rural countryside. It appears, then, that these residents are a source of conflict for farmers, as both survey respondents and interviewees lamented the negative impacts associated with retirement lots. Individuals who have no knowledge of agriculture largely own these parcels of land, which were once intended for the farm family. This lack of understanding has resulted in conflict, vandalism and complaints to government officials by adjacent landowners, largely complicating the daily operation of a farm. While the focus of my research was residential development within the urban area boundary, retirement lot development may have a greater impact on farmers, as it does not face strict development procedures or planning regulations. As a result, Niagara-on-the-Lake’s rural countryside that once was believed to be a haven for farmers, is now populated by many individuals whose livelihoods and lifestyles are unrelated to agriculture.

A final important discovery related to the farming community was the proactive measures farmers take to ensure conflicts are minimized. In particular, when spraying pesticides or fertilizers, farmers often conducted this activity in a manner that had the least impact on adjacent landowners. For example, they often sprayed according to wind
direction and speed, some notified neighbouring property owners and others conducted
this activity early in the morning or later in the evening when conditions were calmer.
These measures are positive as they imply that farmers are aware of the negative impacts
associated with this activity and strive to shield residents from this practice. It became
obvious, therefore, that while farmers are impacted by residential land uses beyond the
urban area boundary, efforts to reduce such conflicts by farmers are clearly evident.

**Policy: Mitigation or Aggravation?**

The goal of the policy section of this research was to understand how planning
policies mitigate land use conflicts; however, it became evident that many planning
policies aggravate these issues. This was most evident when analyzing the *Greenbelt Act*,
as through research and data collected from the farming community, this policy was
found to offend and anger many farmers within Niagara-on-the-Lake. In general, farmers
felt bullied and taken advantage of and believed that their rights as private landowners
had been violated. While it is true that the *Greenbelt Act* did limit their rights by
protecting the farmland from development, it also meant that the use of this land was
significantly limited. Furthermore, policies within this act that restricted severances and
generally labelled all agricultural land as protected, regardless of its quality, further
infuriated the farming community. Considering these aggravators, resolving conflicts
related to agricultural land uses seem to be hampered by the frustrations felt by the
farming community.

At a local level, it was found that the planning department has taken proactive
measures to inform new residents of the nature of adjacent agricultural land. Of
significance, a clause, attached to the plan of subdivision and registered on title, details
the nature of nearby farming activities and should inform potential new residents. It should be noted that such a clause is only registered on new residential developments within the urban area boundary; former retirement lots would not have any such clause. While this is a beneficial measure initiated by the planning department, it does not guarantee that residents will understand the implication of such a clause and does nothing to inform rural non-farm residents of the potential impacts associated with adjacent agriculture. Regardless, such a measure is beneficial and demonstrates that Town Planners and the Development Coordinator are aware of the impacts of residential development adjacent to active agricultural land.

**Lessons: Buffers, Policy and Social Capital**

Finally, this research provided three distinct lessons: one lesson, which should be applied to future residential development in Niagara-on-the-Lake and two that should be adopted to mitigate current land use conflicts within the community. To begin, buffers, specifically vegetative buffers, should be a required condition in every new plan of subdivision. Vegetative buffers have proven successful in absorbing the drift associated with spray chemicals and fertilizers and thus, would be beneficial in Niagara-on-the-Lake. Considering that the main concerns of current residents were related to the application of spray pesticides and fertilizers, any measure that can reduce the impact of this activity are advantageous. Requiring developers to construct a buffer during the planning stages of new residential subdivisions would ensure that residents are not impacted by the adjacent land use. In addition, farmers would also benefit from buffers as the potential for conflicts would likely be reduced.
The remaining two lessons should be applied to the present situation and will help ensure that the potential for conflict amongst existing residential developments, including retirement lots, adjacent to farmland are reduced. At a provincial level, this can be done through a re-evaluation of planning policies, such as the Greenbelt Act, which generalize regulations and ignore the uniqueness of each community. In Niagara-on-the-Lake, this has resulted in the protection of the entire countryside, regardless of the quality of the land and minimum severance requirements that are impossible to meet. Considering these complications, farmers in Niagara-on-the-Lake have seem disenfranchised, as their individual land use rights have been eroded. Ultimately, farmers become discouraged and may be unwilling to partake in conflict resolution. Altering the policies that aggravate the farming community due to their overt generalizations and lack of logical application can reduce tensions within this agrarian locale and restore bonding social capital amongst the farming community.

At a local level, educating residents about the nature of farm practices and encouraging open communication between both groups can dramatically aid in the prevention of conflicts. Through education, potential new residents, as well as existing residents, will gain insight into the nature and necessity of some agricultural activities, thus reducing the likelihood of conflict. Open dialogue between both groups can also reduce conflict as farmers understand how residents are impacted and residents appreciate the proactive measures taken by farmers. Education and open dialogue are not unique, as information regarding farming practices has been made available through the community’s newspaper and farmers often engage their neighbours in an effort to reduce tension. It appears, however, that such measures will only increase if social capital can
be renewed within the community. A level of trust appears to be missing and bridging capital is desperately needed to unite these seemingly disparate groups.

**Concluding Remarks**

Residential development in close proximity to agricultural land is bound to increase throughout Niagara-on-the-Lake. In addition, the migration of non-farm residents to the countryside is destined to continue, as existing retirement lots remain easily accessible. Considering that the town will assuredly continue to grow through population migration, understanding the implications of residential development within this agricultural landscape is imperative. The viability of agriculture in Niagara-on-the-Lake, especially tender fruit, is not guaranteed and reducing a source of aggravation will significantly aid the farming community. As such, it is important that the conflicts between residential and agricultural land uses are mitigated. Through planning regulations, provincial policies and education and communication, conflicts can be reduced and social capital within this community can be restored.

Rural restructuring is reshaping many small towns throughout the western hemisphere, requiring flexibility and resiliency to guarantee the longevity of the community. If Niagara-on-the-Lake is to remain a prosperous and desirable community, it will require the cooperation of both groups of stakeholders. Reducing the conflicts associated with residential and agricultural land uses will rebuild a level of trust, encourage social capital and allow Niagara-on-the-Lake to remain a thriving rural locale.
References


Appendix 1

Dear ____________.

As part of my Master’s program in Geography at Brock University, I am currently conducting a research project that explores how residential and agricultural land use activities are impacted when such land uses exist in close proximity to one another. My focus is on Niagara-on-the-Lake, specifically the neighbourhoods of The Village, Carriage Court Estates, Pallek Estates, Cannery Park and Bradfield Estates. By exploring the perspectives of both the residents that live in these developments and those farming the lands adjacent to them, this study has the potential to build our understanding of how rural residents are affected by nearby agricultural activities and how farmers are affected by nearby residential development. Furthermore, this study may provide lessons for future planning and development activities within Niagara-on-the-Lake and other traditionally agricultural landscapes that are anticipating future land use changes, such as new rural residential development.

As part of my research, I would like to invite you to participate in a brief interview. This would last between 30 and 60 minutes and would involve the exploration of issues such as:

• your knowledge of changing land use activities in Niagara-on-the-Lake;
• your perspectives regarding the ways in which agricultural activities are impacted by nearby residential development;
• your views regarding the extent to which planning policies and other controls effectively mitigate land use conflicts; and
• your ideas about what sorts of planning policies might be formulated to reduce potential conflicts between residential and agricultural land use activities.

Please note that, in order to ensure that your words are effectively captured, our interview session would be recorded. However, you would also be provided with a written transcript of our discussion for your review and verification approximately one month after we meet. Upon completion of this research project (in spring 2012), you would be provided with a written summary of the findings. Further dissemination of my research findings may also take place in the form of academic and professional journal articles, as well as in the form of conference presentations. Your name will not be used in the publication of the research findings; however, you may be identifiable by your profession as a farmer, which will potentially be published along with select quotes from your interview. Please note, however, that you may decline answering any question(s) in the interview that you find sensitive, invasive, offensive or inappropriate, and that you may also remove any comments from the interview transcript that you wish not to have published in my written work.

Thank you for considering this request. In order to determine whether you are willing and able to participate in this study I will contact you by telephone on XX, 2011. In the meantime, please do not hesitate to contact me by e-mail at se03ln@brocku.ca should you have any questions regarding my research. You may also obtain further information by contacting my supervisor, Professor Christopher Fullerton, at (905) 688-5550, extension 3487, or by e-mail at chris.fullerton@brocku.ca. Also, please note that this project has been reviewed and has received ethics clearance from the Brock University Research Ethics Board (File # 11-128). Accordingly, you may also direct any concerns you might have about your potential involvement in this study to a Research Ethics Officer in the Office of Research Services at 905-688-5550, extension 3035. I look forward to speaking with you in the near future.

Sincerely,

Sara Epp
Graduate Student
Department of Geography
Brock University

Christopher Fullerton
Associate Professor
Department of Geography
Brock University
Appendix 2

Interview Question Guide – Farmers

• How many years have you farmed at this site?
• What forms of agriculture do you engage in on your farm?
• What do you feel have been some of the most significant land-use changes in Niagara-on-the-Lake in recent years/during the time you’ve been farming?
• How do you feel about the proximity between agricultural and residential land uses?
• Recent articles in the Niagara Advance detail conflicts arising between local residents and local farm operators. What is your opinion of these conflicts?
• In what ways do you feel that nearby residential development has impacted farming activities?
• From what you know, whenever there are conflicts between residents and farmers, what do you think are the best ways to resolve these conflicts? To your knowledge, how does this compare to the ways in which they are currently dealt with?
• Are you aware of any policies in place that protect farmers and agricultural activities, such The Greenbelt Act or “right-to-farm” legislation?
• Complaints from residents regarding the use of bird bangers have resulted in town by-laws restricting the time of day when they can be used. Do you feel that policies limiting the use of bird bangers or other farm equipment are an appropriate solution to noise complaints?
• Do you feel that these policies are effective or should there be better policies in place?
• As residents are typically the people registering complaints regarding farm activities, do you believe the needs of farmers are adequately addressed within the community?
• Do you believe that planning policies, such as the Greenbelt Act or urban area boundaries, adequately protect farmers from nearby land uses?
• How effective do you think a greater separation or buffer between agricultural and residential land uses would be?
• What future do you see for agriculture within Niagara-on-the-Lake?
Appendix 3

Interview Question Guide – Development Coordinator

- What is the formal process involved in getting a plan of subdivision approved?
- Would you please explain the typical land use requirements a plan of subdivision must meet, such as separation distances between land uses, buffers, etc.?
- Are there any specific considerations given to how adjacent land will be impacted by a proposed subdivision?
- Would you please describe any specific considerations that are made when a proposed subdivision is adjacent to agricultural land?
- Has there been any consideration given to requiring developers to include buffers between the subdivision and adjacent land?
- When a plan of subdivision goes through the public review process, what are the most common issues brought up by community members?
- Are you aware of any meetings in which concern for adjacent farmland was brought up?
- As the development coordinator, what is your opinion on the practicality of building a subdivision adjacent to agricultural land?
- Are there any specific considerations you believe should be made when a plan of subdivision is proposed next to farmland?
- What is your opinion regarding plans of subdivision that require the developer to ensure larger separation distances or buffers from adjacent agricultural land?
- How do you feel about the conflicts that arise between agricultural and residential land uses?
- What do you consider to be the role of the planning department in mediating or reducing the potential for these conflicts?
- What planning policies do you feel would better mitigate these conflicts?
Appendix 4

*Interview Question Guide – Agricultural Engineer*

- Conflicts often arise between residential and agricultural land uses, what is OMAFRA’s role in handling nuisance complaints generated by residents?
- In what ways do you feel that nearby residential development has impacted farming activities?
- From what you know, whenever there are conflicts between residents and farmers, what do you think are the best ways to resolve these conflicts?
- Are there specific laws that protect farmers or farming practices?
- Complaints from residents regarding the use of bird bangers have resulted in town by-laws restricting the time of day when they can be used. Do you feel that policies limiting the use of bird bangers or other farm equipment are an appropriate solution to noise complaints?
- Do you feel that these policies are effective or should there be better policies in place?
- Best practices are often considered standards for farmers, should these standards become actual laws which force farmers to follow specific guidelines (in regards to placement of bird bangers/wind machines, spraying pesticides, etc.)
- As residents are typically the people registering complaints regarding farm activities, do you believe the needs of farmers are adequately addressed?
- Do you believe that planning policies, such as the *Greenbelt Act* or urban area boundaries, adequately protect farmers from nearby land uses?
- How effective do you think a greater separation or buffer between agricultural and residential land uses would be?
- Educating residents or potential residents on what to expect when they move to agricultural areas would be beneficial, but who should be responsible for educating them?
- As residential development near agricultural land is bound to increase in the future, what policies or planning practices should be put in place to limit the impacts on both farmers and residents?
- As OMAFRA deals specifically with agriculture and rural affairs, should they have a greater role regarding land use and development in rural agricultural areas?
Appendix 5

Interview Question Guide – Former Minister of Agriculture

- How have policies related to farming in Ontario changed since you were the minister of agriculture?
- What do you consider to be the greatest challenges farmers are currently faced with?
- In what ways do you feel that nearby residential development has impacted farming activities?
- Should planning challenges, such as the continued development of rural areas due to urban sprawl be considered a significant challenge?
- Do you believe the conflicts which arise between residents and farmers are taken seriously amongst government agencies?
- When you were the minister of agriculture, were issues between farmers and their neighbours a prominent concern, or have these issues arisen more recently?
- Do you consider the needs of farmers or rural residents to be prominent issues within parliament? Do you believe their place in parliament should be made more prominent?
- Who do you feel should be responsible to mitigate these issues?
- How do you feel about government policies that protect farmers from nuisance complaints?
- As OMAFRA deals specifically with agriculture and rural affairs, should they have a greater role regarding land use and development in rural agricultural areas?
- Do you believe that stronger planning policies would better limit conflicts between farmers and residents?
- Do you consider the use of wind machines and bird bangers to be normal farm practices?
- Complaints from residents regarding the use of bird bangers have resulted in town by-laws restricting the time of day when they can be used. Do you feel that policies limiting the use of bird bangers or other farm equipment are an appropriate solution to noise complaints?
- Best practices are often considered standards for farmers, should these standards become actual laws which force farmers to follow specific guidelines (in regards to placement of bird bangers/wind machines, spraying pesticides, etc.)?
- As residents are typically the people registering complaints regarding farm activities, do you believe the needs of farmers are adequately addressed?
- Do you believe that planning policies, such as the Greenbelt Act or urban area boundaries, adequately protect farmers from nearby land uses?
- How effective do you think a greater separation or buffer between agricultural and residential land uses would be?
- Educating residents or potential residents on what to expect when they move to agricultural areas would be beneficial, but who should be responsible for educating them?
- As residential development near agricultural land is bound to increase in the future, what policies or planning practices should be put in place to limit the impacts on both farmers and residents?
Appendix 6

Resident Survey

1. How long have you lived in Niagara-on-the-Lake?
   _______ years.

2. What was your primary reason for moving to Niagara-on-the-Lake?
   __________________________________________

3. In what municipality did you previously reside in before moving to Niagara-on-the-Lake?
   __________________________________________

4. Please rate the importance of the following aspects of Niagara-on-the-Lake in terms of their contribution to residents’ quality-of-life:

<table>
<thead>
<tr>
<th></th>
<th>Very Important</th>
<th>Somewhat Important</th>
<th>Neither Important nor Unimportant</th>
<th>Somewhat Unimportant</th>
<th>Very Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural landscape</td>
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<tr>
<td>Agricultural landscape</td>
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<tr>
<td>Size of community</td>
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<tr>
<td>Rural character</td>
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<tr>
<td>Peace and tranquility</td>
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</tbody>
</table>

If you have any related thoughts about aspects contributing to residents’ quality-of-life in Niagara-on-the-Lake, please write them down in the space provided below.

______________________________________________________________________________
______________________________________________________________________________

169
5. The following statements are about farming activities. Please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of bird bangers is an acceptable farm practice.</td>
<td></td>
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<tr>
<td>The use of wind machines is an acceptable farm practice.</td>
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<tr>
<td>The use of spray fertilizer and/or pesticides is an acceptable farm practice.</td>
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<tr>
<td>The spreading of manure over orchards as fertilizer is an acceptable farm practice.</td>
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<tr>
<td>The conducting of farming activities during the evening and/or on weekends is an acceptable farm practice.</td>
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<tr>
<td>Farm tractor and/or farm truck noise is a nuisance.</td>
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</tbody>
</table>

If you have any related thoughts regarding farming activities in Niagara-on-the-Lake, please write them down in the space provided below.


6. The following statements are about the impact of farming activities on your daily life. For each of the following activities, please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of bird bangers does not impact me.</td>
<td></td>
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<tr>
<td>The use of wind machines at night does not impact me.</td>
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</tr>
<tr>
<td>The spread of mud from the farm to the road is not a concern.</td>
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<td></td>
</tr>
<tr>
<td>Spraying fertilizer and/or pesticides does not limit my use of the outdoors.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>The spreading of manure over orchards as fertilizer does not limit my use of the outdoors.</td>
<td></td>
<td></td>
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<tr>
<td>Tractor and/or track noise does not impact me.</td>
<td></td>
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</tr>
</tbody>
</table>

If you have any other thoughts regarding the impact of farming activities on your daily life, please write them down in the space provided below.


7. The following are general statements about farming within Niagara-on-the-Lake. Please indicate the extent to which you agree with each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise-generating farming activities should be prohibited at night.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bird bangers should not be used near residential dwellings.</td>
<td></td>
<td></td>
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<tr>
<td>Wind machines should not be used at night.</td>
<td></td>
<td></td>
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<tr>
<td>Wind machines should not be located near residential dwellings.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>The use of spray fertilizers and/or pesticides should only be conducted at certain times of the day and/or week.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>The use of spray fertilizers and/or pesticides should not be conducted in close proximity to residential dwellings.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
If you have any other thoughts regarding farming in Niagara-on-the-Lake, please write them down in the space provided below.

8. The following statements relate to issues concerning the agricultural lands adjacent to residential subdivisions. Please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nearby farming activities negatively impact me and my family.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I would prefer not to have farming activities take place in close proximity to my home.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Potential new residents should be made aware of the nature of nearby farm activities before they purchase a home in Niagara-on-the-Lake.</td>
<td></td>
<td></td>
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<tr>
<td>Farmers need to be more aware of how farming activities impact nearby residents.</td>
<td></td>
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</tr>
<tr>
<td>Farmers should adjust their practices to reduce the impacts on nearby residents.</td>
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<td></td>
</tr>
</tbody>
</table>

If you have any other thoughts regarding issues concerning agricultural land adjacent to residential subdivisions, please write them down in the space provided below.

9. The following statements relate to the role you would like the Niagara-on-the-Lake town council to play with respect to local farming practices. Please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Council should pass a by-law restricting the use of wind machines at night.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Council should pass a by-law requiring farmers to keep adjacent roadways clean or clear of debris.</td>
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</tr>
<tr>
<td>Council should consider the opinions of nearby residents when regulating farm activities that take place close to residential homes.</td>
<td></td>
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<tr>
<td>Council should require a minimum separation distance between farming and residential land use.</td>
<td></td>
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</tr>
<tr>
<td>The development of new residential neighborhoods next to active farmland should be discouraged.</td>
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</tr>
<tr>
<td>Better planning policies are required within the town of Niagara-on-the-Lake to limit the impacts of farming on nearby residents.</td>
<td></td>
<td></td>
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</tbody>
</table>

If you have any other thoughts regarding the role you would like the Niagara-on-the-Lake town council to play with respect to local farming practices, please write them down in the space provided below.
Basic Demographic Questions

We would like to be able to group various respondent patterns and attitudes based on demographic groups. Your responses to the following questions would be appreciated. These questions are completely optional, but please be assured that this information is sought for statistical purposes only and will be kept completely confidential. For each of the following questions, please circle the correct answer.

10. In which of the following age groups do you belong?
   a. 18 – 24 years
   b. 25 – 34 years
   c. 35 – 44 years
   d. 45 – 54 years
   e. 55 – 64 years
   f. 65 – 74 years
   g. 75+ years

11. What is your gender?
   a. Male
   b. Female

12. What is your current employment status?
   a. Full-time
   b. Part-time
   c. Retired
   d. Unemployed

13. What is your current marital status?
   a. Married
   b. Divorced
   c. Widowed
   d. Single

14. How many individuals currently reside in your household?
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5 or more
Appendix 7

Farmer Questionnaire

1. How long have you lived in Niagara-on-the-Lake?
   ____________ years.

2. How long have you been a farmer?
   ____________ years.

3. What type of farm do you operate?
   _______________________________________

4. Approximately how large is your farm?
   ____________ acres.

5. What is your farming status?
   a. Full-time farmer ☐
   b. Part-time farmer ☐

6. Is farming your primary source of income?
   a. Yes ☐ If yes, please skip to question 8
   b. No ☐

7. If no, approximately what percentage of your income is derived from the farm?
   a. 0 – 10% ☐
   b. 11 – 20% ☐
   c. 21 – 30% ☐
   d. 41 – 50% ☐
8. The following are statements about farming and farming-related issues in Niagara-on-the-Lake. Please check the appropriate box to indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niagara-on-the-Lake is an ideal community.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I plan to continue farming in Niagara-on-the-Lake until I retire.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Agriculture is appreciated in Niagara-on-the-Lake.</td>
<td></td>
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<tr>
<td>There is a strong future for agriculture in Niagara-on-the-Lake.</td>
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</tr>
</tbody>
</table>

If you have any other thoughts about farming in Niagara-on-the-Lake, please write them down in the space provided below.

9. The following statements are about land uses in Niagara-on-the-Lake. Please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential development is important to Niagara-on-the-Lake’s economy.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Existing residential development adjacent to agricultural land does not create a problem for farmers.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Future residential development should not take place adjacent to active farmland.</td>
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</tr>
</tbody>
</table>

If you have any other thoughts about land uses in Niagara-on-the-Lake, please write them down in the space provided below.

10. The following statements are about farming activities. Please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spraying fertilizer and/or pesticides is necessary to ensure optimal crop production.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The use of bird bangers is necessary to reduce the loss of produce.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wind machines are necessary to reduce the threat of frost.</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>The noise associated with the operation of farm equipment is a normal part of agricultural activity.</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

If you have any other thoughts about farming activities, please write them down in the space provided below.

11. Among the community issues affecting Niagara-on-the-Lake in recent years have been concerns about the relationship between residential and agricultural land uses. With regards to this subject, please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential development negatively impacts agricultural activities or practices.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>The use of bird bangers is an acceptable farm practice.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The use of wind machines is an acceptable farm practice.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
The location of bird bangers should not be restricted because of adjacent residential land uses.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
</table>

The location of wind machines should not be restricted because of adjacent residential land uses.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
</table>

Farmers should limit or modify their activities where these occur in close proximity to residential land uses.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
</table>

Residential complaints associated with farm activities unfairly limit a farmer’s use of their land.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
</table>

If you have any other thoughts about community issues affecting Niagara-on-the-Lake, please write them down in the space provided below.

__________________________________________________________________________________________

12. The following statements are about the ways in which residential and agricultural land use conflicts are resolved within Niagara-on-the-Lake. Please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
</table>

Conflicts between residents and farmers are resolved fairly by Town Council.

The process for resolving land use complaints is clear and fair.

The needs of farmers are given adequate consideration through the conflict resolution process.

Placing restrictions on farming activities is the best resolution for resident-generated land use complaints.

If you have any other thoughts regarding the resolution of residential and agricultural land use conflicts in Niagara-on-the-Lake, please write them down in the space provided below.

__________________________________________________________________________________________

13. The following statements are about planning policies or government legislation. Please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
</table>

The provincial Greenbelt Act and Regional Municipality of Niagara’s Urban Area Boundaries protect farmland from residential development.

Current local planning policies protect the needs of residents more than the needs of farmers.

Laws that protect farmers and the use of their land from residential complaints are necessary.

Increased separations between agricultural and residential land-uses are needed in Niagara-on-the-Lake.

The use of agricultural land should not be restricted due only to resident complaints.

Agricultural policies, such as those regarding the use of bird bangers or wind machines, should be consistent throughout the Region of Niagara.

If you have any other thoughts regarding planning policies or government legislation, please write them down in the space provided below.

__________________________________________________________________________________________

175
14. The following statements are about the future of agriculture within Niagara-on-the-Lake. Please indicate the extent to which you agree or disagree with each of these statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continued residential development adjacent to operating farms will continue to negatively impact Niagara-on-the-Lake’s agricultural economy.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>If residential development continues, the prominence of agriculture within the community will decrease.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Residential development adjacent to operating farms should be limited in order to protect the rights of farmers.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Agricultural land within the Urban Area Boundary is at risk of being converted to residential land uses.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

If you have any other thoughts regarding the future of agriculture within Niagara-on-the-Lake, please write them down in the space provided below.

-----------------------------------------------------------------------------------------------------------------------------

Basic Demographic Questions

We would like to be able to group various respondent patterns and attitudes based on demographic groups. Your responses to the following questions would be appreciated. These questions are completely optional, but please be assured that this information is sought for statistical purposes only and will be kept completely confidential. For each of the following questions, please circle the correct answer.

15. In which of the following age groups do you belong?
   a. 18 – 24 years
   b. 25 – 34 years
   c. 35 – 44 years
   d. 45 – 54 years
   e. 55 – 64 years
   f. 65 – 74 years
   g. 75 + years

16. What is your gender?
   a. Male
   b. Female

17. How many individuals currently reside in your household?
   a. 1
   b. 2
   c. 3
   d. 4
   e. 5 or more
Appendix 8

Town of Niagara-on-the-Lake
1993 Four Mile Creek Road, P.O. Box 100, Virgil, Ontario, LOS 170
905-468-3266 • www.notl.org

The Town of Niagara-on-the-Lake, together with the Grape Growers of Ontario and the Ontario Ministry of Agriculture, Food and Rural Affairs invite you to attend a

Community Workshop
on the topic of

Wind Machines
Tuesday December 5, 2006 from 7-9 PM
Court House, 26 Queen St., NOTL.
Along with Landowner Gary Barlow and members of Council, representatives of the growers’ organizations and OMAFRA will be in attendance. A presentation will be given and feedback about issues and solutions will be invited through small group discussions. All attendees will be asked to sign in as well as to provide contact information, so that we can follow up with a report and provide additional information on this topic as it becomes available.

Wind Machine Questions and Answers

1. How do wind machines work?

Wind machines can improve yield of winter wheat and grape crops during cold spells. Usually located by geoparks orires, wind machines pull warm air from 10 or more metres above the field down to the crop level. Wind machines increase the effectiveness of natural cold winters in Niagara. Stressed wind machines recorded almost full crops and high yields from 1 to 3 acres without any remedial work and high mortality of vines. (Note: Wind machines should not be confused with wind turbines, which are windmill-like for generating electricity.)

2. How do growers/owners know when to start them?

Ideally, growers receive notification as a crop level at 20 to 30 minutes above ground. They turn on wind machines when the air temperature drops below natural freeze protection and damage, the air temperature drops below 1°C at the 30 minute level, or when wind speeds exceed 10 mph. These situations can occur when winds are steady or when there are gusts. This combination of factors can result in damage to growing vineyards and crops in this area of Ontario. Outliers are widely dependent on the season and location. It varies very much and location of the wind speeds to control when to turn on, then to turn off, a wind machine.

3. Aren’t some wind machines quieter than others?

Different types of wind machines exist in Ontario. Although manufacturers believe that noise levels are not big, different noise levels can occur from different wind machines. Noise can be a concern for homeowners and nearby businesses.

4. Why can some nights be wind machines operating at night, but not in others?

The variation in wind speed and direction can have a significant impact on the performance of wind machines. Wind machines operate at night to reduce the temperature, increase the humidity, and decrease the wind speed. This can help to reduce the frost damage to the grapevines and vineyards.

5. Are there more wind machines coming to our area?

The decision to install wind machines varies from vineyard to vineyard. The wind speed over the past year has been the growing season issue in the machine is not the real crops, and this wind speed likely varies from year to year. However, these wind machines are in use in NOTL, and it seems likely that more could be coming in the future.

6. Is it possible to get advance notice of when wind machines will be used?

During January and February, it’s a good idea to assume wind machines will be used on nights when temperatures are expected to be -18°C to -20°C or colder and there is little wind. In December or March, the critical temperatures are usually below zero, with temperatures of -20°C to -25°C. However, wind machines are not always turned on during these periods. Temperatures that are below -10°C during the period of the grape vine in April, or even warmer in October, might not be the time when wind machines would operate.

7. Is anyone doing any research on wind machines?

Yes. A three-year Griffin-Purdue applied research project has been sponsored by the Grape Growers of Ontario and the Wine Council of Ontario. St/button for (2008) plant cultivars include development of new varieties for the cold and efficient, cost-effective use of wind machines in Ontario, as well as to determine the impact of wind machines on the vineyard. For information about the study, please visit www.ontariowine.com/carefulforrewindmachines.

4. Are there any rules about where growers/owners place wind machines?

Currently, the Town of Niagara-on-the-Lake does not have a by-law that enables homeowners to use wind machines in their yards. Homeowners who wish to use wind machines in their yards must obtain a by-law and homeowners must follow the standards of the by-law to ensure that wind machines are not visible from their yards.

5. Why are grape growers/owners using wind machines that are sensitive to cold?

Growers/owners plant grapes according to local and global demand. There has been a great increase in production of popular wine such as Merlot, Cabernet Franc, and Chardonnay, so growers/owners are expanding in the craft of the grapevines by growing vineyards.

6. If wind machines are new here, why are they considered “normal farm practice”?

Whether or not a farm practice is considered “normal” is determined through the Farm Practices Protection Board, a quasi-judicial administrative board appointed by the Province of Ontario and governed by the Ministry of Agriculture. The question of whether wind machines are a normal farm practice in Niagara has not yet been determined by the Board.

11. What should I do if I have a complaint or would like more information?

For information about wind machines or to register a complaint, please call the Ontario Ministry of Agriculture, Food and Rural Affairs Agricultural Information Contact Centre at 1-877-327-6827. They will usually be visited within 24 hours.

(Town of Niagara-on-the-Lake, 2006)
Appendix 9

So... You’re Moving to the Country

Rural Ontario is more than just a pretty place...

It’s also where the province’s 55,000 farm families live, and conduct their businesses. Chances are, you’ll have an Ontario farmer for a neighbour.

Whether the farm is an orchard or a greenhouse, a dairy farm or a beef feedlot, or any one of the 12 main types of agricultural operations, it is above all, a business.

That means that certain activities take place according to a production schedule. And some of those activities can have an effect on you.

Farms are often noisy and dusty. Sometimes they can cause odours. During planting or harvesting season, you may notice extra lights in a field at night, or feel the vibration of heavy equipment.

Ontario’s agri-food sector employs 745,000 people and is one of the province’s leading industries, contributing more than $33 billion to the economy every year.

For the most part, these activities are considered to be normal farm practices. The farmer’s ability to conduct these practices is governed by the Farming and Food Production Protection Act, which promotes and protects normal farm practices in agricultural areas while addressing health, safety and environmental concerns. However, farmers do not have the right to pollute, or do whatever they please, whenever they please.

Sometimes disagreements or conflicts can arise between neighbours. You need to know that there is a process in place to resolve these disagreements.

The Ontario government is working to promote farmers and you, their non-farming neighbour, living and working in harmony.

To find out more about this aspect of your life as a new resident to rural Ontario, call the Agricultural Information Contact Centre, at 1-877-424-1300 to obtain your copy of the Citizen’s Guide to the Normal Farm Practices Protection Board.

Please Note

This pamphlet is not a substitute for legal advice and representation. The Ontario Ministry of Agriculture, Food and Rural Affairs accepts no responsibility or liability for the outcome of any Hearing in which any party relies on this pamphlet.

This is the first in a series of pamphlets that include:

So, You’re Moving to the Country
Are You Preparing for a Normal Farm Practices Protection Board Hearing?
The Hearing Procedure – Normal Farm Practices Protection Board

It is also strongly recommended that you pick up the Citizen’s Guide to the Normal Farm Practices Protection Board.

For more information:
Toll Free: 1-877-424-1300
Local: (519) 826-4047
E-mail: ag.info.omafra@ontario.ca

(Ontario Ministry of Agriculture, Food and Rural Affairs, 2010)
Appendix 10

BIRD BANGERS

Crop damage due to birds is a major problem for grape growers. Bird Bangers are one proven and effective method of reducing this damage. Bird Bangers were an important tool in protecting the $46M of NOTL grapes harvested in 2007 – 61% of the total Ontario grape production.

Bird Bangers emit cannon-like sounds that scare away birds. The sound will be heard throughout rural areas and in some residential neighbourhoods near vineyards.

The Town of NOTL has no enforcement jurisdiction over Bird Bangers or their operation. All farmland is private property and vandalizing a Bird Banger is a criminal act.

Remember, when it comes to Bird Bangers, tolerance is needed by both growers and neighbours.

For more information on the use of Bird Bangers, or to lodge a complaint against a farmer you believe is not operating a Bird Banger under normal farm practice (see below) contact the Agricultural Information Contact Centre of the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) at 1-877-424-1300.

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The following information may help you to better understand Best Management Practices for the use of Bird Bangers.

1. Bird Bangers are one of the proven and effective acoustical deterrents used to scare birds. A combination of control strategies is recommended, including visual, physical and acoustical deterrents.
2. Bird Bangers should only operate during daylight hours, between 30 minutes before local sunrise and 30 minutes after local sunset.
3. Under regular operating conditions, Bird Bangers should be set-back at least 125m (410 feet) from neighbouring homes.
4. Bird Bangers should be placed no closer than 125m from each other.
5. Bird Bangers should be installed as level as possible and should fire in all directions over time and not fire more in one direction than in another.
6. Bird Bangers should be monitored frequently to ensure they are operating properly, especially when a vineyard operator lives off-site.

Ontario farmers are protected from nuisance noise complaints by neighbours provided they are following normal farm practice as per the Farming and Food Production Protection Act (FFPPA) 1998. This means ‘conducted in a manner consistent with proper and acceptable standards as established and followed by similar agricultural operations under similar circumstances.’ For more information on the Act, go to www.omafra.gov.on.ca/english/engineer/nfppb/nfppb.htm

(Town of Niagara-on-the-Lake, 2012a)