Farmland Preservation Using Agricultural Systems Planning

Lessons from Oregon for the Greater Golden Horseshoe of Ontario

A major research paper

prepared by Laura Schreiner
School of Environmental Design and Rural Development
University of Guelph
under the supervision of Dr. John Devlin

in partial fulfillment of requirements for the degree
Master of Science (Planning)

August 2017
Abstract

This paper explores Oregon’s land use planning policies and their outcomes for farmland and agriculture in the Willamette Valley. An agricultural systems planning framework is used to guide the investigation, which uses a combination of literature review and key informant interviews to extract lessons which may be relevant in the Greater Golden Horseshoe region of Ontario. It is concluded that Oregonian policy has been relatively successful in preserving farmland and supporting the agricultural system in the Willamette Valley. Despite certain differences in culture, industry profile, demographics, and political systems, Oregon’s experience holds many lessons for Ontario, including the benefit of a watchdog organization, the importance of complementary strong urban land use planning, and the possibilities and potential pitfalls of taking a systems-based approach to agricultural land use planning.
Acknowledgements

This report is written with deep gratitude to those whose support was instrumental in its creation: John, Aabir, and my family. Heartfelt thanks are extended to those without whom there would have been very little to write: the interviewees who spoke with me, and a host of other helpful and supportive Oregonians.

Laura Schreiner
# Table of Contents

1  **Introduction**  

2  **Agricultural systems in the Greater Golden Horseshoe**  
   2.1  The Greater Golden Horseshoe  
   2.2  Decline in agriculture  
      2.2.1  Farmland loss  
      2.2.2  High rates of farmland rental  
      2.2.3  Untenable property tax rates  
      2.2.4  Loss of farm-related businesses and services  
      2.2.5  Impermanence syndrome and landscape permanence  
   2.3  Land use policy in the GGH  

3  **Agricultural systems theory and modeling**  
   3.1  Proposed definitions of the agricultural system in Ontario  
      3.1.1  Caldwell (2015)  
      3.1.2  Walton (2015)  
      3.1.3  Revised Greenbelt Plan (2017)  
   3.2  Author’s definition  

4  **The agricultural system of the Willamette Valley**  
   4.1  The Willamette Valley  
   4.2  Indicators selected for investigation  
   4.3  Indicators: Agricultural land base  
      4.3.1  Agricultural land  
   4.4  Indicators: Agri-business group  
      4.4.1  Farm businesses  
      4.4.2  Input and support services  
      4.4.3  First level processing  
      4.4.4  Wholesale and direct farmer-to-consumer marketing and distribution  
   4.5  Summary
5 Overview of Oregon’s land use planning system
  5.1 Broader US context
  5.2 Administrative structure
  5.3 Comprehensive plans and statewide goals and guidelines
  5.4 Exclusive Farm Use zones and property taxes
  5.5 Minimum lot sizes
  5.6 Urban Growth Boundaries
  5.7 Measure 37 and Measure 49

6 Evidence of an “agricultural systems” approach in Oregonian law and policy
  6.1 Oregon’s legal statutes
  6.2 Oregon’s statewide planning goals and guidelines
  6.3 Metropolitan Portland’s urban reserves and rural reserves
    6.3.1 Implementation failures

7 Critiques of the system
  7.1 Shadow conversion
  7.2 “Inclusive” Exclusive Farm Use (EFU) zoning
  7.3 Lack of regional planning and inconsistent implementation
  7.4 Inflexibility
  7.5 Susceptible to political challenges
  7.6 Lack of permanent protection

8 Is policy the reason for Oregon’s success?
  8.1 1000 Friends of Oregon
  8.2 Agricultural considerations
  8.3 Cultural context

9 Lessons for Ontario
  9.1 Differences in context
  9.2 Lessons
    9.2.1 Agricultural systems planning is possible, and it requires resources
    9.2.2 Firmer, rational urban growth boundaries create greater land use certainty
    9.2.3 Citizen engagement and support is critical
9.2.4 A watchdog is important  
9.2.5 Strong rural planning and strong urban planning are mutually dependent  
9.2.6 Land use planning is not enough  

10 Conclusions  

References  

Appendix A: List of interviewees  

Appendix B: Interview question guide  

Appendix C: Oregon’s 19 Statewide Planning Goals
1 Introduction

The Greater Golden Horseshoe (GGH), a 31,000 square kilometre region of south-central Ontario, is home to both Canada’s largest and fastest-growing urban area and some of the best agricultural lands in the country. The region has a long history of diverse, productive farming, although in recent years the agricultural sector is showing some signs of decline. In an attempt to better support agriculture in the region, the provincial government is moving towards a more holistic approach to planning for “agricultural systems”. While this concept is intuitively logical and supported by experts in the field, it is very new and has yet to be operationalized.

While no other jurisdiction has done exactly what Ontario is doing, Oregon makes a compelling case study because of its much longer history of protective land use planning and its increasingly holistic or agricultural systems-based approach. The Willamette Valley, in the northwestern part of Oregon, makes a particularly relevant study region. Although the Willamette is a small fraction of Oregon’s landmass, it is home to three quarters of its population and three of its largest cities: Portland, Eugene, and Salem, the state capital. The Willamette is also home to some of the best agricultural land in the United States, thanks to its rich and highly fertile alluvial soils, temperate climate, and relatively abundant water. This combination of rich agricultural resources (and an associated successful farming sector) and dense (and growing) population was the major impetus for the development of Oregon’s land use planning system in the 1970s. There are therefore parallels between the Willamette Valley and the GGH in terms of both the agricultural and demographic context and some of the motivations behind the farmland protection policies.
This research uses the framework of agricultural systems planning to explore Oregon’s successes (and challenges) with land use planning for agriculture in the Willamette Valley, and identifies lessons which may be useful in Ontario as the province seeks to implement agricultural systems planning in the GGH.

The research question and objectives for this project were as follows:

**Research Question:** Has an agricultural systems planning approach been used in Oregon, and has the approach used in Oregon been effective in supporting the agricultural system in the Willamette Valley?

**Research Objectives:**

1. To determine to what extent land use planning in Oregon uses a systems-based approach to planning for agriculture.
2. To determine whether Oregon’s approach to land use planning has avoided or been an effective response to impermanence syndrome and associated challenges often faced by agriculture near growing urban areas.
3. To analyze outcomes to date of Oregon’s land use planning system on agriculture in the Willamette Valley for successes, challenges, mitigation strategies, and other outcomes which may illuminate lessons relevant to planning for agriculture in the GGH context.
Research was conducted through literature review and key informant interviews with 17 participants in Oregon, who had knowledge and experience of agriculture in the Willamette Valley, the land use planning system in Oregon, and/or their relationship. Interview participants included farmers, extension agents, government policy makers, elected state representatives, land use lawyers, farmers market managers, researchers and academics, and staff of NGOs engaged in agricultural and land use planning issues. Interviewee names have not been used but a list of interviewees by general description is found in Appendix A: List of interviewees, and the interview question guide used is found in
Appendix B: Interview question guide. Interviews were conducted in Oregon in March and April of 2017.

The results are compelling. Interviews with only 17 participants revealed stories of two farmers who had moved to Oregon from other states because it seemed like the most viable place to start a farm business, and two policymakers who hailed from eastern states and either moved to or remained in Oregon because they believed the land use planning system there was much better than elsewhere. More than one interviewee stated bluntly that Oregon would not have the world-renowned, award-winning, and profitable wine industry that it does today had the land use planning system not been implemented just in time to preserve the farmland that now hosts dozens of vineyards. Beyond these anecdotes, the data confirm that Oregon has indeed been successful at preserving agricultural land in the Willamette Valley and that the agricultural sector in the region is relatively viable.

Oregon’s experience with land use planning in the Willamette Valley holds many lessons for Ontario and the GGH, including the importance of firmer and rational urban growth boundaries to provide landscape permanence for landowners, the value of a watchdog group to defend and enforce the land use planning system, and the necessity of strong complementary urban development policies for successful rural outcomes. The Willamette Valley’s experience also demonstrates that a more systems-based approach to land use planning for agriculture is possible, although it requires significant resources. It also highlights potential pitfalls which Ontario should plan ahead for, such as implementation issues at the level of local government.

This report begins in Ontario, describing the agricultural system in the Greater Golden Horseshoe, and some of the challenges it faces, in Chapter 2. Chapter 3 explores the theory
behind the concept of agricultural systems and develops a definition used as a framework
throughout this research. In Chapter 4, this framework is used to investigate the successes and
challenges of the Willamette Valley’s agricultural system. Chapter 5 provides an overview of
Oregon’s land use planning system, including a discussion of its uniqueness in the broader
American context. Chapter 6 describes evidence of an agricultural systems approach in this
policy. Critiques of Oregon’s land use planning system are discussed in Chapter 7. Further
context for the success of Oregon’s agricultural system is provided in Chapter 8, which asks
whether and to what extent this success can be attributed to Oregon’s policies. Finally, Chapter 9
returns to the Greater Golden Horseshoe by extracting lessons from Oregon which may be
relevant in this context, and Chapter 10 offers conclusions and suggestions for future research.
2 Agricultural systems in the Greater Golden Horseshoe

2.1 The Greater Golden Horseshoe

The Greater Golden Horseshoe (GGH) wraps around the western end of Lake Ontario, extending from the shores of Lake Erie in the south to the shores of Georgian Bay in the north, and from the Region of Waterloo in the west to the County of Northumberland in the east. The municipalities which make it up are divided into an “Inner Ring” and “Outer Ring” (see Figure 1). The region is home to Canada’s largest urban area, four of Canada’s 10 most populous cities, and almost nine million people (Statistics Canada, 2017a). It is also one of North America’s fastest-growing conurbations (network of connected urban areas) (Beshiri, 2010).

Figure 1: The Greater Golden Horseshoe (GGH) municipalities and the areas of the four regional land use plans (Source: Advisory Panel, 2015, p. 8)
Despite this unique urban character, the GGH also has excellent agriculture. It includes some of the best farmland in Canada, including 42% of Ontario’s Class 1 land (OFA and ED, 2015). Its rich soils, relatively mild climate, and unique microclimates (such as the tender fruit and grape growing regions), support an extremely diverse range of agricultural activities: over 200 different agricultural products are produced here, many of which feed into one of the three largest food processing clusters in North America (Walton, 2015).

Distinct differences exist between agriculture in the Inner and Outer Rings. In the Inner Ring, farms tend to be either small and produce high value products, or very large with a widely distributed rented land base. The percentage of rented land tends to be higher. Production is typically either focused on products that benefit from proximity to urban markets or services, such as nurseries and sod production, or products that work well on rented land, such as cash crops. By comparison, Outer Ring farms tend to be larger with a lower percentage of rented land. Whereas livestock is uncommon in the Inner Ring, dairy and poultry production are the two highest-ranking commodities in the Outer Ring measured by 2013 farm cash receipts (Walton, 2015, p. 21). See
Table 1 for details.
Table 1: Basic agricultural data for Inner Ring and Outer Ring GGH (Sources: 1: Statistics Canada, 2017b; 2: Walton, 2015)

<table>
<thead>
<tr>
<th></th>
<th>GGH Overall</th>
<th>Inner Ring</th>
<th>Outer Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm cash receipts (2013)¹</td>
<td>$3.721 billion</td>
<td>$752.7 million</td>
<td>$2.968 billion</td>
</tr>
</tbody>
</table>
| Top commodities by farm cash receipts (2013)¹ | 1. Floriculture, nursery and sod  
2. Dairy  
3. Poultry | 1. Floriculture, nursery and sod  
2. Corn  
3. Field vegetables | 1. Dairy  
2. Poultry  
3. Floriculture, nursery and sod |
| Total farmland area (2011)   | 3.551 million acres | 754.6 thousand acres | 2.797 million acres |
| % of farmland owned by operator (2011)² | 63% | 53% | 66% |

An anomaly to this pattern is Niagara Region, part of the Outer Ring. The unique microclimate and soils of Niagara make it a top producer of horticultural products and fruit (including wine grapes), with many small-scale, high-value farm enterprises, very unlike any other Outer Ring municipality (Walton, 2015).

2.2 Decline in agriculture

2.2.1 Farmland loss

Despite the excellent natural resources and the persistence of the industry, there are signs of decline in agriculture in the GGH. One obvious sign is the loss of agricultural land as it is converted to non-agricultural uses. Between 1996 and 2016, over 637,000 acres (2,578 square kilometers) of farmland were lost in the GGH (See Figure 2): a loss of 14% of Outer Ring farmland and 21% of Inner Ring farmland in only 20 years.
Figure 2: Total GGH farmland in acres, 1996-2016 (Data sources: Statistics Canada, 2017b; Statistics Canada, no date a; Statistics Canada, no date b)

The conversion of agricultural land to non-agricultural uses is significant because the conversion is almost always permanent; land cannot be recovered for agriculture afterward. This loss is particularly significant considering the uniquely high potential of this land for agriculture. It is a non-renewable resource.

2.2.2 High rates of farmland rental

Signs of agricultural decline in the GGH can also be seen on lands that remain as farms. While some farm businesses and sectors do well in the rural-urban fringe, others tend not to. Livestock production – a type of farming that is particularly prone to conflicts with nearby residents – is in decline in the GGH, especially in the Inner Ring (Walton, 2015). Rates of farmland ownership by the farm operator are lower in the GGH than the provincial average of 71%, and with few exceptions are lowest in the Inner Ring – as low as 42% (see Table 2) (Walton, 2015). Some areas of the GGH are experiencing "land banking": the buying up of rural land by
developers and investors (both domestic and foreign) with the expectation that the land will eventually be re-designated for urban development, at which time it can be either sold or developed at significant profit (Advisory Panel, 2016, p.89). This land-banking can drive the cost of land up and prevent new farmers from purchasing land. A report with analysis and recommendations prepared by an advisory council for the province to use in its 2015-2017 review of the four land use plans pertinent in the GGH (known as the Crombie Report) notes that land-banking is particularly evident between the Greenbelt and the developed urban area, an area unofficially known as the “whitebelt”, and in certain areas outside the Greenbelt, such as Brant and Simcoe — a pattern known as “leapfrogging” the Greenbelt.

Table 2: GGH Farmland area and ownership percentage by municipality, 2011 (Source: Statistics Canada; CANSIM Table 004-0204)

<table>
<thead>
<tr>
<th>Outer Ring Municipality</th>
<th>Total farmland (acres)</th>
<th>% Owned</th>
<th>Inner Ring Municipality</th>
<th>Total farmland (acres)</th>
<th>% Owned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brant</td>
<td>160,739</td>
<td>61%</td>
<td>Halton</td>
<td>79,567</td>
<td>42%</td>
</tr>
<tr>
<td>Kawartha Lakes</td>
<td>326,092</td>
<td>68%</td>
<td>Peel</td>
<td>93,843</td>
<td>46%</td>
</tr>
<tr>
<td>Simcoe</td>
<td>510,584</td>
<td>59%</td>
<td>York</td>
<td>153,559</td>
<td>48%</td>
</tr>
<tr>
<td>Peterborough</td>
<td>228,936</td>
<td>70%</td>
<td>Durham</td>
<td>297,012</td>
<td>61%</td>
</tr>
<tr>
<td>Dufferin</td>
<td>172,344</td>
<td>66%</td>
<td>Hamilton</td>
<td>130,589</td>
<td>53%</td>
</tr>
<tr>
<td>Haldimand</td>
<td>213,969</td>
<td>62%</td>
<td>Inner Ring total</td>
<td>754,570</td>
<td>53%</td>
</tr>
<tr>
<td>Northumberland</td>
<td>240,881</td>
<td>65%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wellington</td>
<td>499,176</td>
<td>73%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterloo</td>
<td>221,087</td>
<td>73%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Niagara</td>
<td>222,911</td>
<td>63%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outer Ring total</strong></td>
<td><strong>2,796,719</strong></td>
<td><strong>66%</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total GGH farmland</td>
<td>3,551,289 acres</td>
<td>63%</td>
<td></td>
<td>63% owned by farm operator</td>
<td></td>
</tr>
</tbody>
</table>
used to its full potential, or cultivated for the most productive crop”. This is because rental agreements do not typically provide farmers enough certainty to invest in the land (e.g. for infrastructure, crop rotation, year-over-year fertility improvement), and therefore limit the crops grown to commodities requiring minimal investment and providing short-term income, such as cash crops like corn and soybeans (Walton, 2015). Landowners may also lack interest in investing in their land because they will not see the benefit themselves (particularly if they are only interested in holding the land for long-term development purposes). This can lead to degradation of farmland held in rental agreements for years or even decades due to deterioration of existing infrastructure (e.g. the collapsing barns and fences familiar to drivers of the GGH’s highway network), topsoil erosion, and stripping of soil nutrients.

2.2.3 Untenable property tax rates

The high cost of land in the GGH can make farming difficult even for farmers who own their land outright. Property tax rates in Ontario are based on assessed property values, which are in turn based on recent market activity in the area. Property values in the GGH increasingly reflect the land’s potential market value for development, which usually far outstrips its agricultural capacity. As the gap between these two values increases, annual property tax rates can increase to the point where they cannot be sustained by a farming income. This makes farming more difficult even for farmers who own their land, and can further encourage them to move to areas with lower property values (Walton, 2015).
2.2.4 Loss of farm-related businesses and services

Another signal of decline in agriculture in the GGH is the loss of businesses and services that support agriculture, such as input suppliers, processing facilities, and equipment dealers. Walton (2015, p. 33) refers to this as "one of the telling signs of a struggling agricultural area". It makes for a downward spiral: fewer farms results in the closing of farm support businesses, which in turn makes business harder for the remaining farms and may cause them to relocate. Despite policies in the Greenbelt Plan and Growth Plan intended to support farm support businesses, their number continues to decline in the GGH (Advisory Panel, 2016). A report on an Analysis of Food and Farming Assets in the GGH notes the particular loss of businesses in certain areas of the processing sector, such as fruit and vegetable processing (Synthesis and 4DM, 2016).

2.2.5 Impermanence syndrome and landscape permanence

Much of the decline in agriculture seen in the GGH described above is in keeping with what is known as “impermanence syndrome”. Impermanence syndrome occurs when farmers in a region believe there is no future in farming due to the encroachment of a nearby urban area (Nelson, 1992). If they believe that their farmland will be absorbed by the urban area in the foreseeable future, farmers tend to disinvest in their operations. This may take the form of reduced labour, lack of capital investment, and lack of investment in longer-term projects such as orchards and greenhouses. Young people tend not to start farming in regions demonstrating impermanence syndrome (Walton, 2016). Walton (2015) argues that a concept of “landscape permanence” is fundamental to a successful agricultural community; in its absence,
disinvestment and decline are common. The evidence above suggests that in many parts of the GGH, landscape permanence is not strong and agriculture is in decline or threatened.

### 2.3 Land use policy in the GGH

Historically, planning for agriculture in Ontario has primarily consisted of identifying and protecting (to varying degrees) the soils and lands best suited to farming. There is, however, an emerging consensus that this land-based approach alone is not effective in supporting a thriving agricultural sector, particularly in the face of strong urban growth pressures.

In recent years, policy in Ontario has shifted towards decreasing urban expansion and increasing the protection of farmland. The Growth Plan for the Greater Golden Horseshoe (2006) attempts to channel more growth into existing urban areas through densification; the Provincial Policy Statement (2014) raised the bar for justification of urban area expansion; and the Greenbelt Plan (2005) has, arguably, improved the landscape permanence within its borders by restricting settlement area expansions to the ten-year Greenbelt Plan review period rather than during any municipality’s Official Plan review. However, the Greenbelt covers only a small percentage of the GGH (see Figure 1), and urban expansion, although now slower and denser (Neptis, 2014), continues under the PPS and Growth Plan.

The provincial government is now moving towards planning for "agricultural systems" - a more holistic concept which includes the land base as well as the farm operations and associated infrastructure and services (such as suppliers, abattoirs, and grain mills). The 2017 revisions to the four provincial land use plans relevant in the GGH (the Growth Plan for the GGH, the Greenbelt Plan, the Niagara Escarpment Plan, and the Oak Ridges Moraine Conservation Plan – see Figure 1) attempt to strengthen farmland protection and take a more holistic approach to
planning for agriculture. The concept of “agricultural systems” – first introduced in the 2005 Greenbelt Plan, but not defined – has been given a definition and map, an implementation guideline, and aligned references in all four revised policies. While the concept of agricultural systems is intuitively logical and has been strongly advocated by experts on agricultural planning such as Margaret Walton (2015), it is quite a new concept in policy and the practicalities, challenges, and best practices of implementation have yet to be fully understood.

3 Agricultural systems theory and modeling

Agricultural systems and modeling have been a subject of academic research since the 1940s, used for both economic and social science analysis. There has been increased discussion of agricultural systems in Ontario over the past few years in light of the province’s Four Plan Review and the Crombie Report’s recommendation that the province “work with municipalities, the agriculture sector and other stakeholders to provide policy direction and guidance toward the consistent identification, mapping and protection of an integrated agricultural system across the GGH” (Advisory Panel, 2016, p.93). The original Greenbelt Plan (2005) contained reference to an “Agricultural System” without defining it; the revised Greenbelt Plan (2017) contains a definition which is discussed below. The two best-known proposals for a definition of the agricultural system (other than that given in policy) in Ontario have come from Caldwell and Walton.
3.1 Proposed definitions of the agricultural system in Ontario

3.1.1 Caldwell (2015)

Caldwell proposes a very broad definition of agricultural systems which includes elements such as regulations, professional expertise, and research and education institutions, (see Figure 3 for a simplified schematic). The elements are grouped into five categories with farms at the centre. His paper highlights the complex web of relationships that makes agriculture happen (Caldwell, 2015). Its drawback, however, is that it is so broad as to be difficult to work with for policy or analysis because it captures almost everything.

![Figure 3: Schematic of agricultural systems as proposed by Caldwell (2015)](image)

3.1.2 Walton (2015)

Walton (2015) proposes a more limited definition of agricultural systems. She identifies two broad categories: the agricultural land base and the “agri-food cluster” (see Figure 4). While this definition does not capture all of the influences on agricultural acknowledged by Caldwell, it
has the advantage that its elements are much easier to identify and even spatially locate on a map if desired.

![Diagram of agricultural system]

**Figure 4: Schematic of the agricultural system based on Walton’s 2015 definition**

### 3.1.3 Revised Greenbelt Plan (2017)

In the revised Greenbelt Plan (2017) (as well as the other three of the GGH land use plans), “agricultural system” is a defined term. The definition is as follows:

The system mapped and issued by the Province in accordance with this Plan, comprised of a group of inter-connected elements that collectively create a viable, thriving agricultural sector. It has two components: 1. An agricultural land base comprised of **prime agricultural areas**, including **specialty crop areas**, and **rural lands** that together create a continuous productive land base for agriculture; 2. An **agri-food network** which
includes *infrastructure*, services, and assets important to the viability of the agri-food sector. (Greenbelt Plan, p.61-62)\(^1\)

Italicized terms are defined terms in the Greenbelt Plan. This definition is represented schematically in Figure 5.

---

**Figure 5: Schematic of the agricultural system based on Greenbelt Plan (2017) definition (italics indicate defined terms)**

### 3.2 Author’s definition

After reviewing the definitions of agricultural system in the literature, the following definition was developed for the purposes of this research:

---

\(^1\) This revised Greenbelt Plan was released on May 18, 2017, after much of this research was completed and well after the working definition of agricultural system used throughout this project (see Author’s definition) was completed. It is included here for comparative purposes and completeness, but it should be understood that this definition post-dated the author’s and therefore did not influence it.
The agricultural system consists of an agricultural land base, made up of both agricultural land and non-agricultural supportive land that provides environmental services important to farming; and an agri-business group, consisting of farm businesses and farm families, infrastructure, input and support services, first-level processing, and wholesale and/or direct farmer-to-consumer marketing and delivery services.

This definition is represented schematically in Figure 6. The agricultural land base is shown in green and underpins the agri-business group, shown in blue. The agri-business group is intended to capture those agricultural businesses which are within one economic step of farms themselves. Basic flows of resources and/or energy are indicated by arrows.

This definition clearly draws a great deal from Walton’s (2015) definition, particularly in the delineation of the agri-business group. Walton’s definition of the “agri-food cluster” (see Figure 4) is particularly effective at capturing those businesses which are critical to a successful agricultural industry while excluding other businesses in the agri-food sector, such as restaurants, caterers, and major grocery retailers. While these businesses no doubt play an important role in the agri-food industry more broadly, they are usually urban-based and have little direct bearing on the success of nearby farms. The intent with this definition is to capture businesses and services within one economic forward and backward linkage from the farm. The research sought to determine whether and to what extent such a systems-based approach has been used for planning for agriculture in Oregon.
Figure 6: Schematic of agricultural system definition used for this research

Farm families have been highlighted in this definition to reflect the feedback received by many researchers that “saving the land won’t save the farmer” (Advisory Panel, 2016, p. 95; see also Caldwell, 2015 and Walton, 2015). While this is often used to express the fact that farming must be financially viable in a region to keep the land in production, i.e. that farm businesses must be able to succeed, it is also important to remember that these businesses are run by people. Farm families are therefore included in this definition to capture any social programs or policies that may be in place in a region to support farm families in continuing to farm.

Some examples of elements within each of the categories within the agricultural system are as follows. This list is indicative rather than exhaustive.
Table 3: Examples of elements of the agricultural system’s agricultural land base

<table>
<thead>
<tr>
<th>AGRICULTURAL LAND BASE</th>
<th>Supportive land (not on a farm property, but provides environmental services important to farming)</th>
</tr>
</thead>
</table>
| Agricultural land      | - Farmland, both operating and fallow  
                          | - Non-farming areas on farm properties, such as woodlots, wetlands, hedgerows, etc. |
|                        | - Water recharge areas  
                          | - Forests  
                          | - Water catchment/filtration areas  
                          | - Other public lands |

Table 4: Examples of elements of the agricultural system's agri-business group

<table>
<thead>
<tr>
<th>AGRI-BUSINESS GROUP</th>
<th>Wholesale and direct farmer-to-consumer marketing and distribution</th>
<th>Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm businesses</td>
<td>First level processing</td>
<td></td>
</tr>
<tr>
<td>Farm families</td>
<td>Input and support services</td>
<td></td>
</tr>
<tr>
<td>- Farm operations.</td>
<td>- Individuals and families who own, operate, and or/live on farms.</td>
<td></td>
</tr>
</tbody>
</table>
| May be large-scale,| - Seed suppliers  
| corporate enterprises or small unincorporated family operations.| - Feed suppliers  
| This category also includes value-added secondary businesses which support the farm/farm family as well, such as agri-tourism, value-added (e.g. jam/preserve production, cider pressing).| - Input suppliers (e.g. pesticides, herbicides, fertilizers)  
| - Breeders  
| - Equipment dealerships and repair businesses  
| - Veterinaries  
| - Supply stores (e.g. of hand tools, protective clothing, lumber, hardware)  
| - Infrastructure suppliers (e.g. fencing, livestock management systems)  
| - Nurseries for agricultural seedlings/saplings  
| - Abattoirs  
| - Grain mills and silos  
| - Processors (e.g. cheese/yogurt, cider/wine/beer, fruit and vegetable canneries)  
| - Packagers  
| - Wholesale food distribution companies  
| - Produce auctions  
| - Farmers markets  
| - Food hubs  
| - Community Supported Agriculture (CSA) distribution locations  
| - Transportation infrastructure  
| - Public water drainage infrastructure  
| - Public irrigation infrastructure  
| - Utilities used by farms (e.g. electricity, municipal water, natural gas, internet) |
4 The agricultural system of the Willamette Valley

4.1 The Willamette Valley

The agricultural systems framework described above was used to investigate the success of agriculture and the land use planning system in the Willamette Valley region of Oregon. The Willamette Valley can be readily identified in Figure 7 as the largest contiguous area of prime (Class 1 and 2) soils in the states of Washington and Oregon, stretching from Washington County to Lane County. The Willamette Valley is bound at its north end by the Columbia River (which is also the border between Washington and Oregon states), and on the east, south, and west by mountain ranges.
For the purposes of this study, the Willamette Valley is approximated by the nine counties which make it up: Washington, Multnomah, and Clackamas (which together make up the Portland Metro area), and the mid- and south Valley counties of Yamhill, Polk, Marion, Benton, Linn, and Lane (see Figure 8).
The Willamette Valley is a uniquely rich agricultural area, as Figure 7 illustrates. It is also home to most Oregonians, as will be discussed further below. Agriculture in the Willamette Valley is perhaps best characterized by the word “diverse”; over 200 different agricultural commodities are grown in the region, and many of its top agricultural products are not considered commodities on the national scale because they are grown so little outside of the region. Oregon is the leading producer in the country of many of the Willamette Valley’s biggest crops: hazelnuts, blackberries, certain grass seeds, sugar beet seeds, and Christmas trees, to name a few (Board of Agriculture, 2017). Another differentiating characteristic of Willamette Valley agriculture is that the vast majority of its farms are family-owned; corporate farms are not as common here as in other parts of the United States (Interviewees 01, 03, and 16).
Table 5 compares some basic characteristics of the Willamette Valley and the Greater Golden Horseshoe. They are very similar in area, although the GGH has more than three times the Willamette Valley’s population. They also contain very similar numbers of farms – 17,353 and 19,266 respectively. The farmland area is larger in the GGH, with 3.6 million acres compared to the Willamette’s 1.6 million, representing 46% and 19% of the total area in each region respectively. The balance of land in the Willamette is largely forest land, mostly mountainous, and some of it managed commercially. The GGH has some forested and wilderness land, but not to the same extent; instead, a greater proportion of GGH land is urbanized.

Table 5: Characteristics of Willamette Valley and Greater Golden Horseshoe
(Sources: United States Census Bureau, 2016a and 2016b; United States Department of Agriculture, no date j.; Statistics Canada, 2017a; Statistics Canada, 2017b)

<table>
<thead>
<tr>
<th></th>
<th>Willamette Valley</th>
<th>Greater Golden Horseshoe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area (by municipal boundaries)</td>
<td>8.4 million acres (2012)</td>
<td>7.8 million acres (2016)</td>
</tr>
<tr>
<td>Farmland area</td>
<td>1.6 million acres (19%) (2012)</td>
<td>3.6 million acres (46%) (2011)</td>
</tr>
<tr>
<td>Number of farms</td>
<td>17,353 (2012)</td>
<td>19,266 (2011)</td>
</tr>
<tr>
<td>Average farm size</td>
<td>93 acres</td>
<td>188 acres</td>
</tr>
</tbody>
</table>

Despite the Willamette Valley’s dense and growing population, agriculture remains an important industry. Willamette Valley counties made up six of the top ten counties for agricultural sales in 2012, and all six were in the northern Valley, surrounding Portland and Salem, where population is densest (1000 Friends of Oregon, 2013). In 2005, the three counties

2 While data from the 2016 Canadian Census of Agriculture is now available, in some cases in this report the 2011 data is used for better comparison with the data available from the United States.
that comprise the Portland metropolitan area produced $714 million in agricultural products, 17% of the state’s total agricultural output (ODA, 2007).

The Willamette Valley also makes for a valuable case study in land use planning because it was largely rapid population growth in this region through the 1950s and 1960s that led to the creation of Oregon’s state-wide land use planning system (Walker and Hurley, 2011). Although these days strong land use planning programs in North America are typically associated with liberal and urban politics, the creation of Oregon’s land use program was championed by Republicans and farmers in the Willamette Valley concerned over the future of their operations. California, their southern neighbour, had experienced tremendous population growth, largely in the form of unchecked low-density residential development, and Oregonians had been watching the negative consequences of traffic congestion and loss of rural farms and lifestyles unfold. The “ranchette” – a rural property not used primarily for production, but for the lifestyle of living in the country supported by well-paying urban jobs – was very popular at the time, and this trend was spreading to Oregon both culturally and through an influx of Californian immigrants, seeking more affordable and less populated areas in Oregon’s beautiful countryside. Fearing the demise of farming, rural lifestyles, and certain environmental values core to the Oregonian identity, a bipartisan collection of policymakers developed a ground-breaking and forward-thinking state-wide land use planning system, not to stop growth, but to channel and manage it for the greater good and to balance the many competing interests (Walker and Hurley, 2011).

In Ontario, as in Oregon, the land use plans recently revised for the GGH are provincial policies, and they are similarly being driven by the challenging combination of excellent agricultural resources and large populations and growth pressure. Furthermore, the structure of
the program – state/provincial-level policies that are implemented at the local level through comprehensive/official land use plans and zoning ordinances – make the comparison relevant.

4.2 Indicators selected for investigation

Indicators of the viability or success of the agricultural system were developed for each of the categories identified in the definition of agricultural system. Of those, certain indicators were selected for research based on factors such as strength of indicator, availability of information, and their frequent citation as evidence of agricultural decline in the GGH. If they are clear indicators of a problem in Ontario, do they also exist in Oregon?

Table 6: Indicators for agricultural system analysis

<table>
<thead>
<tr>
<th>Agricultural System Component</th>
<th>Indicators used for research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural land base</td>
<td>1. Area in farmland (1959-2012)</td>
</tr>
<tr>
<td>Supportive land</td>
<td>-none- (this component likely has a less direct influence on the agricultural system, and is too complex to gather data on)</td>
</tr>
</tbody>
</table>
| Farm businesses              | 1. Number of farm businesses (1959-2012)  
2. Number of farms by income category (1987, 2012)  
3. Percentage of farmland owned vs. rented |
| Farm families                 | -none- (this component is too complex to gather data on due to confounding factors) |
| Input and support services    | 1. NAICS employment data for Support Activities for Crop Production (1151) (2007-2011)  
2. NAICS employment data for Support Activities for Animal Production (1152) (2007-2011) |
| First level processing       | 1. NAICS employment data for fruit and vegetable preserving and specialty food manufacturing (3114) (2005-2015)  
2. NAICS employment data for animal slaughtering and processing (3116) (2005-2015)  
| Marketing and distribution   | 1. Number of farmers markets (2009-2017) |
| Infrastructure               | -none- (this component was deemed less important for the purposes of this study) |
The indicators selected above were used to explore the Willamette Valley’s agricultural system via literature review. Below a combination of interpretation of secondary data (such as Census of Agriculture data) and other analyses found in the literature is presented. These show that while agriculture in the Willamette Valley certainly has its challenges, there are some indicators of its ongoing success and stability.

4.3 Indicators: Agricultural land base

4.3.1 Agricultural land

One indicator of the success of the land use planning system in the Willamette Valley is simply the number of acres in farmland over time. Figure 9 below shows the acres of “land in farms” in the Willamette Valley according to the USDA Census of Agriculture in all census years from 1959 to 2012. Land in farms data includes productive agricultural land as well as non-productive land on farm properties, such as woodlands and wastelands not under cultivation (United States Department of Agriculture, no date a). Oregon’s modern land use laws were enacted in 1973, requiring, among other things, local governments to create comprehensive land use plans. The last of these was approved in 1986 (Knapp, 1994). Figure 9 shows very different trends before 1973 as opposed to after 1986: while acres in farmland decreased dramatically in the 1960s, it appears to hold relatively steady during the 1990s and 2000s, fluctuating slightly in both directions but declining moderately in net.
A glance at the population data for the Willamette Valley from 1970 to 1998 (see Figure 10) shows that the decline in the rate of farmland loss is not due to a significant slowing of population growth. This would appear to suggest the planning system is effectively preserving agricultural land in the face of population pressures.
There are, however, several caveats to this assessment. The Census of Agriculture only records acres in farmland that exist on properties that meet the census definition of farm, which is occasionally changed. From 1959 to 2012, two definitions were used, with the change taking place in 1974. For the years prior to that, a farm was considered to be a place that produced a minimum of $50 in sales of agricultural products, or would have been expected to produce as much in an ordinary year. For places under 10 acres in size, this minimum income threshold was $250. In 1974, the minimum value of agricultural sales was increased to $1,000, and the property size differentiation was dropped (United States Department of Agriculture, 2017; United States Department of Commerce, 1972). This makes data before and after 1974 not truly comparable, which is indicated by a break in the line on the chart; however, this change could not be expected to have a dramatic change on the overall trends seen on either side of this jump. Furthermore, the Census of Agriculture does not track the zoning of farmland either
remaining or lost, and therefore does not distinguish between development that is progressing according to Oregon’s planning system and that which is not (Gosnell and Chrostek, 2008). Neither does it consider the soil quality of the farmland either remaining or lost.

Still, it is widely acknowledged in the literature that using total census farmland area as an indicator of policy success is crude. A vast array of confounding factors influence land use patterns, including changes in economic conditions or industry, population, demographics, housing preferences, availability of land for redevelopment, and physical features of land which may constrain development (e.g. slope), to name a few. Land use policy is also continually evolving, and as Gosnell et al. (2011, p. 191) point out, its effects are “largely incremental, occur over long periods of time, and are therefore difficult to measure especially in light of the many confounding factors”. Furthermore, policy changes rarely coincide with the time periods for which data is available (e.g. in census years). The result is a policy environment in which it is difficult to conduct conclusive analysis. Furthermore, this analysis does not consider the soil quality, location, or other qualities of the farmland preserved or lost – an important consideration for the long-term sustainability of farming.

Nevertheless, the trends which can be studied can be indicative. While Census of Agriculture data is crude, some researchers have conducted more robust analyses. Some of these analyses are summarized below. In their review of studies of the effects of Oregon’s land use planning system, Gosnell et al. (2011) identify three categories of studies: broad land use pattern analysis based on existing data (such as the Census of Agriculture analysis above), studies using indicators to assess the effects of planning on rural land development, and finally, studies which use more intensively sampled data to create an empirical model of land use change.
Grosnell et al. (2011) argue that these categories reflect a progression of thought and robustness of analysis. Most studies available to date fall into one of the first two categories, which they argue generally fail to effectively deal with the many confounding factors. An example of the third, empirical approach is a study by Kline in 2005, which built a model based on aerial photographs dating from 1974 to 1994 to estimate the density of buildings on zoned and unzoned farm and forest lands (Gosnell et al., 2011). This model attempted to control for factors including socioeconomics, topographic, and proximity to urban areas, and concluded that absent zoning controls, an additional 14.4% of agricultural land that existed in 1974 would have been developed to at least low density by 1994 (Gosnell et al., 2011). Gosnell et al. (2011) argue that this is perhaps the most convincing evidence of the effectiveness of Oregon’s land use policies in reducing development of farm and forest lands. After their review, they conclude that, despite the many confounding factors, there is sufficient evidence that Oregon’s land use policy is effective in preserving farm and forest land (Gosnell et al., 2011).

Another well-known analysis of the conversion of farmland in Oregon was led by Gary Lettman of Oregon State University’s Institute for Natural Resources. His team’s analysis of land use change between 1974 and 2014 is based on aerial imagery taken throughout that period. Due to its methodology, this data is of better quality and value than the farmland area numbers in the Census of Agriculture. Their report concludes that the net average annual loss of “resource lands” (farm, forest, and range lands) to low-density residential or urban uses dropped dramatically after 1984, when implementation of comprehensive land-use planning was completed state-wide (see Figure 11) (Lettman et al., 2016). They also demonstrate a similar drop in the area of private resource land converted to low-density residential or urban uses per
new resident of the state – an indication that development accommodating Oregon’s growing population has become more compact, depending more on densification and less on greenfield development (i.e. conversion of resource lands to urban uses) than it did prior to the full implementation of the land use planning system (see Figure 12) (Lettman et al., 2016).

Figure 6 – Net average annual loss of private land changing from forest, farm, and range uses to low-density residential or urban uses, 1974-1984, 1984-2005, and 2005-2014

Figure 11: Net average annual loss of private resource lands to low-density residential or urban uses (Source: Lettman et al., 2016, p. 8)
Another comparison of outcomes of “Smart Growth” policies in eight states found that, on a state-wide average, Oregon lost as much farmland per new resident between 1987 and 2002 as Indiana, which had no smart growth policy. However, the vast majority of this land was found to be in the eastern part of the state; in the Willamette Valley, the amount of farmland per new resident actually increased over that period by 0.05 acres (Ingram and Hong, 2009). This could suggest that Oregon’s planning system is effectively directing growth and preferentially protecting high-value lands.

The general consensus in the literature is that Oregon’s land use planning system has been effective in protecting farmland from development compared to a no-system scenario, although there may not be evidence to suggest it is more effective than other states’ systems (Gosnell and Chrostek, 2008).
4.4 Indicators: Agri-business group

4.4.1 Farm businesses

4.4.1.1 Number of farm businesses

The number of farm businesses is another indicator of long-term trends in the agricultural system. Census of Agriculture data shows that the number of farms in the Willamette Valley has fluctuated between approximately 13,000 and 21,000, and as of the 2012 Census it stood at 17,353 (see Figure 13). Many of the caveats that apply to the farmland area indicator when using Census of Agriculture data, above, apply here as well: the definition of farm was changed for the 1974 Census (which is reflected by a break in the chart), and perhaps more importantly, there are so many confounding factors influencing the number of farms over time – especially economic conditions – that one cannot read too much into this indicator on its own. Nevertheless, this data does, like the former indicator, show a very different trend in the years before state-wide land use planning as compared to after the mid-1980s, when comprehensive land use planning was in place state-wide. There was a sharp decline in number of farms through the 1960s but after the mid-1980s the numbers fluctuated but without a single period drop as great as that between 1964 and 1969.
Another important consideration here is that the definition of a farm in the Census of Agriculture is very broad, requiring only $1,000 of income from agricultural products (United States Department of Agriculture, 2017). This leaves a great deal of room for these numbers to include “lifestyle” farms, which are managed primarily for the lifestyle they offer the owners and supported by off-farm income, but which produce just enough agricultural products to qualify for census farm status (and associated property tax benefits). In the three Metro Portland counties, farms that sell less than $10,000 in agricultural products per year outnumber farms that sell more than $10,000 in agricultural products per year (“$10K farms”) by more than three
to one (ODA, 2007). Nevertheless, agriculture remains a significant industry in this region, and $10K farms account for 63% of farmland and 88% of agricultural sales (ODA, 2007). While this suggests that commercial agriculture is very much ongoing in the Metro region, it also highlights the weaknesses of number of farm businesses as an indicator.

This indicator is merely suggestive, but it can be explored a little more deeply through the following indicator.

4.4.1.2 Number of farm businesses by income category

Examining the number of farm businesses by their income category is perhaps more revealing. Further analysis of the number of Willamette Valley farm businesses by income category reveals that the number of farm businesses reporting less than $10,000 in agricultural sales increased between 1987 and 2012 by 11%, whereas the number of $10K farms increased by 18% (United States Department of Agriculture, no date e and no date j). If commercial farming in the Willamette Valley was really struggling and mid-size farms were being either absorbed into large farm businesses or converted to lifestyle farms at a rapid rate, one might expect to see the number of farm businesses reporting less than $10,000 increasing relatively more rapidly. In fact, the ratio of small scale farms to larger farms has not changed much at all (see Figure 14 and Figure 15). The breakdown of farms by income category has remained strikingly consistent over these 25 years. Also notable in this breakdown is the lack of great variation between the counties: across the entire Willamette Valley, the percentage of farms in each sales category is quite similar, even in the three Metro counties of Clackamas, Multnomah, and Washington, where pressure to convert to lifestyle farms is likely higher.
These data suggest that while the number of farms in the Willamette Valley has fluctuated over time, and while there are many lifestyle farms in the region, the breakdown of farms by income category does not vary dramatically across the Valley or over the past 25 years. This suggests a certain stability in the agricultural system.

### 4.4.1.3 Percentage of farmland owned vs. rented

Walton (2015) discusses reasons why a high percentage of farmland rented by the farmer as opposed to owned can be of concern. (This is discussed in more detail in section: 2.2.2 High

---

**Figure 14**: Percentage of farms in sales categories, by county, 2012  
(Source data: United States Department of Agriculture, no date j) – note that the breakdown of farms by income category has not changed much since 1987

**Figure 15**: Percentage of farms in sales categories, by county, 1987  
(Source data: United States Department of Agriculture, no date e)
rates of farmland rental.) In the Willamette Valley, the percentage of farmland owned by farmers decreased very slightly overall from 1982 to 2012 (the years for which this data is available from the Census of Agriculture), and sits at present at 60% owned (see Figure 16).

![Percentage of farmland owned by the operator in the Willamette Valley](image)

*Figure 16: Percentage of farmland acres owned by the operator in the Willamette Valley (Source data: United States Department of Agriculture, No date a, No date b, No date c, No date d, No date e, No date f, No date g, No date h, No date i, No date j)*

Notably, the percentage of farmland owned by the operator varies by county in the Willamette Valley, although this variation does not appear to correlate closely with proximity to major population centres. Figure 17 shows farmland ownership rates by county in 2012, with the three Portland Metro counties highlighted in orange. These three counties have farmland ownership rates within the range of all other Willamette Valley counties. In fact, the lowest rate of ownership is seen in Linn County, a relatively large county in the south Valley, away from the largest areas of growth pressure, with the highest total acreage of farmland and only a middling population.
Walton (2016) discusses the complexity and therefore weakness of farmland ownership rates as an indicator of agricultural decline; a wide array of factors affect farmland ownership. However, it is safe to say that proximity to growth pressure is unlikely the primary driver of rates of farmland rental in the Willamette Valley. The literature as well as several interviewees noted one other potential influence on farmland ownership rates: recent farmland purchase in the Willamette Valley as investment, not for its potential future development, but simply for its investment return as agricultural land (Interviewees 01, 10, 26). In some cases, land purchased by investment groups is being planted to perennials such as hazelnuts, which take years to bear nuts at profitable levels, indicating confidence on the part of the investors that the land will remain in agriculture for years to come. New plantations of hazelnuts can be seen all over the Valley, including in growth areas such as Yamhill and Washington Counties. One interviewee pointed to agricultural corporations historically active in California increasingly investing in
Oregon farmland in the wake of years of drought in California and massive die-offs of fruit and nut orchards there (Interviewee 01).

Farmland rental rates in the Willamette Valley may therefore be most revealing in suggesting that the factors driving them may be different than those seen in other North American contexts.

4.4.2 Input and support services

4.4.2.1 Number of businesses: Support activities for animal production and crop production (NAICS 1151 and 1152)

The businesses and services that farmers rely upon are, as previously discussed, a vital component of a thriving agricultural system; however, it is very difficult to collect data on them. North American Industry Classification System (NAICS) employment data for certain industries, available through the United States Census Bureau’s County Business Patterns, might be used as a proxy indicator, but at the county level these numbers are low enough that they are frequently presented as ranges or obscured altogether for privacy reasons. The employment numbers are therefore simply too clouded to be useful in this analysis. The number of establishments is available, however, and this data for NAICS codes 1151 (support activities for crop production) and 1152 (support activities for animal production) are presented in Figure 18 for 2007-2011, the only years for which data were available.
Figure 18: Agriculture support activity businesses in the Willamette Valley, 2007-2011 (Source data: United States Census Bureau, 2007; 2008; 2009; 2010; 2011)

Although the short time period and the lack of information on the size or growth of the businesses in question makes for a very crude analysis, it at least suggests that the industry of businesses that sell products and services to farmers is not in rapid decline.

This reflects the general feedback given by interviewees on this subject. The businesses that farmers rely upon are numerous and tend to be specialized by commodity type, so different answers may be expected from different people. Some interviewees mentioned consolidation in equipment dealerships, while others – notably small scale farmers – said their access to products and services they rely upon has actually improved in recent years (Interviewees 11, 14). One interviewee mentioned expansion in the agrichemical industry in the Willamette Valley (Interviewee 01). The overall impression was that while agriculture-related businesses may be consolidating or decreasing in some respects, generally, farmers still have the access they
require. This indicator is further muddied, however, by broader economic trends of business consolidation and the growth of online shopping.

### 4.4.3 First level processing

#### 4.4.3.1 Number of businesses: fruit and vegetable preserving and specialty food manufacturing, dairy product manufacturing, and animal slaughtering (NAICS 3114, 3115, and 3116)

NAICS data would similarly be useful as a proxy indicator for first-level processing businesses in the Willamette Valley, but the data availability is limited in the same way. Figure 19 presents the number of processing establishments in three different NAICS categories: fruit and vegetable preserving and specialty food manufacturing (3114), dairy product manufacturing (3115), and animal slaughtering and processing (3116).

![Figure 19: Number of first-level processing facilities in Willamette Valley, 2005-2015 (Source data: United States Census Bureau, 2005; 2006; 2007; 2008; 2009; 2010; 2011; 2012; 2013; 2014; 2015)](image-url)
Again, this is a crude analysis at best, but it once again suggests a sector that appears to be either stable or growing. Feedback from interviewees on this subject was similar to the previous one, although a lack of meat processing facilities in or near the Willamette Valley was specifically mentioned by several, as was the closure of some vegetable and fruit processing facilities over recent years and decades (Interviewees 01, 10, 16). One interviewee also mentioned recent growth in fruit and vegetable processing, largely to serve niche local markets demanding high quality products (Interviewee 01).

Once again, this analysis does not differentiate by size. Oregon is a major food exporter (frozen fruit from Linn County can be found in Guelph grocery stores), so these processing facilities may be more geared to the larger scale export-focused market. A report by Ecotrust (2015, p. 3) found significant gaps in Oregon’s food processing and distribution infrastructure for “agriculture of the middle”: producers who are “too small to compete in commodity markets, and too big to participate exclusively in direct to consumer channels such as farmers’ markets”. Their research showed that Oregon’s food infrastructure (for processing, distribution, marketing, etc.) is neither readily accessible nor affordable for mid-scale producers, and that this barrier is “inhibiting the growth and development of a robust regional food economy” (Ecotrust, 2015, p. 8).

4.4.4 Wholesale and direct farmer-to-consumer marketing and distribution

4.4.4.1 Farmers’ Markets

Oregon has a strong direct market sector, where farms sell directly to consumers (e.g. at farmers’ markets, on-farm stands, or via direct delivery). In the 2012 Census of Agriculture, Oregon ranked ninth in absolute direct consumer sales, valued at $44.2 million (United States
Department of Agriculture, 2014). Oregon’s population is significantly smaller than the other members of this top ten list, though; on a per-capita basis, Oregon would rank first of these ten. However, despite strong farm direct sales, little data is available at the county level, making indicators for the Willamette Valley difficult to come by. Data is available, however, for farmers’ markets in the Willamette Valley from 2009 to present (see Table 7), and the number of farmers’ markets grew state-wide by a factor of nine between 1993 and 2012 (Brekken et al., 2012). Table 7 shows that the number of farmers’ markets in the Willamette Valley has fluctuated but generally grown modestly since 2009.

These numbers hide a great deal of information; for example, they are net, and do not capture the number of farmers markets closing each year, nor why they fail (Stephenson et al., 2006). However, they do suggest that the sector for direct-marketed farm goods is stable and growing in the Willamette Valley.

<table>
<thead>
<tr>
<th>County</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2017?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benton</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Clackamas</td>
<td>10</td>
<td>12</td>
<td>15</td>
<td>14</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>Lane</td>
<td>9</td>
<td>9</td>
<td>15</td>
<td>14</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Linn</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Marion</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>11</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Multnomah</td>
<td>23</td>
<td>26</td>
<td>33</td>
<td>25</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>Polk</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Washington</td>
<td>6</td>
<td>11</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Yamhill</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>64</strong></td>
<td><strong>78</strong></td>
<td><strong>98</strong></td>
<td><strong>89</strong></td>
<td><strong>95</strong></td>
<td><strong>94</strong></td>
</tr>
</tbody>
</table>
Data from the Communities Reporter Tool, a public access node for community data developed at Oregon State University, also indicates that the prevalence of farmers’ markets (measured as the number of farmers’ markets registered with the Oregon Farmer’s Market Association per 1000 people) increased between 2005 and 2013 in all Willamette Valley counties except Benton and Linn (Communities Reporter, 2016).

Taken together, these data suggest that farmers’ markets are a growing sector of the Willamette Valley’s agricultural system. It is important to remember, however, that farmers’ markets are only one marketing and distribution channel and represent a small fraction of agricultural sales in the region.

4.5 Summary

Overall, the indicators paint a picture of an agricultural system that is doing quite well in the Willamette Valley. The challenges facing modern-day agriculture in North America are well documented, and Oregon is not immune to these. Furthermore, Ecotrust’s 2015 report points out that the agricultural sector is more accurately a collection of commodity-specific sectors (beef, poultry, grain, fruit, vegetables, etc.) which frequently operate completely independently, and the analysis above is too high-level to illuminate more specific problems within the system. Nevertheless, the industry appears to be doing well overall, Oregon remains a place known for its agricultural exports and farm-to-table innovation (Ecotrust, 2015), and – importantly, for this research – both the analysis above and the literature agree that the land base appears to relatively well protected by the land use planning system.
5 Overview of Oregon’s land use planning system

5.1 Broader US context

Oregon’s land use planning system is well-known; it is a model on which many other North American jurisdictions have based their own planning systems to varying degrees. It is both one of the strictest regimes on the continent and pioneering, its basic structure having been implemented relatively early on, in 1973. It remains quite unique: only 13 other states had a state-wide planning system in place as of 2011, only six of which had a boundary to limit urban growth (Walker and Hurley, 2011). By contrast, some states take an almost entirely hands-off approach: only one county in Montana had a comprehensive land use plan in place as of 2008 (Walker and Hurley, 2011).

5.2 Administrative structure

While policy is ever-evolving, Oregon’s land use planning system was implemented in more or less its current form in 1973. The two bills that established it, still known as Senate Bill 100 (SB 100) and Senate Bill 101 (SB 101), created the administrative structure for the program that stands today. The Land Conservation and Development Commission (LCDC), made up of seven appointed citizen volunteers from across the state, has final approval on decisions such as accepting (“acknowledging”) cities’ and counties’ land use plans for their compliance with state-wide planning goals and directives. LCDC oversees and receives recommendations from the Department of Land Conservation and Development (DLCD), which is the professional and administrative arm of land use planning and a department of the state government. DLCD provides technical expertise to the LCDC and works directly with local governments on periodic
reviews of their land use plans (Walker and Hurley, 2011). There is also a Land Use Board of Appeals (LUBA), which was established in 1979 to hear appeals on all state and local land use laws. The three members of LUBA are appointed by the governor (and confirmed by the state Senate) for four-year terms and must be members of the Oregon State Bar (LUBA, no date).

5.3 Comprehensive plans and statewide goals and guidelines

Oregon’s planning system sets state-wide directives but leaves implementation to the local levels of government (cities and counties). Under SB 100, LCDC was responsible for developing statewide planning goals and guidelines, and the 19 still in use today were adopted by 1976. (See Appendix C: Oregon’s 19 Statewide Planning Goals for the complete list and further information.) DLCD publishes a document providing more detailed goals and guidelines for each of the 19, and this document is well known in the planning and policy world in Oregon, with reference frequently made to the goals simply by their number, e.g. “the success of Goal 13”. Goal 3: Agricultural Lands establishes many of the requirements which counties and cities must implement to protect farmland. Although officially called “goals”, they are mandatory; many a county and city has been sued for failing to comply with them (Interviewee 03, 16).

Cities and counties are required to create, enforce, and regularly update land use plans, called “comprehensive plans”, within their jurisdictions. These comprehensive plans are the primary mechanism used to implement the planning goals and guidelines. This system was intended to strike a balance between local authority and consistent, ambitious state-wide rules (Interviewee 03).
5.4 Exclusive Farm Use zones and property taxes

Mandatory restrictive farmland zoning, with corresponding tax benefits for the landowner, was introduced in 1973 with Senate Bill 101 (Sullivan and Eber, 2010). (Some legislation on preferential farmland tax rates had been in place since 1961, but its use was optional to cities and counties and agricultural land tax benefits were available even outside of EFU zones, so it was not as thoroughly implemented (Abbott and Howe, 1993; Sullivan and Eber, 2010).) After 1973, under state laws and more detailed DLCD rules, local governments were required to inventory and designate agricultural lands in their jurisdiction according to state definitions. The beneficial property assessment afforded to Exclusive Farm Use (EFU)-zoned properties is in some ways a compensation for the restrictions EFU zoning places on the property. These restrictions include regulations on farm and non-farm dwellings (with the latter more severely restricted), and both farm and non-farm land uses (see Or. Rev. Stat. § 215).

5.5 Minimum lot sizes

Minimum lot sizes are another key component of the land use system, with minimums generally set at 80 acres for farmland (i.e. the cropland of western Oregon, including the Willamette Valley) and 160 acres for rangeland (i.e. the lower-quality soils of central and eastern Oregon, used primarily for grazing) (DLCD, no date). While many parcels of high-quality farmland persist in the Willamette Valley of under 80 acres, they generally predate the 1973 minimum lot size establishment; severances of small lots are severely restricted now.
5.6 Urban Growth Boundaries

A final key component of Oregon’s land use system – and perhaps the one for which it is best known – are urban growth boundaries. Every city in Oregon is required to establish an Urban Growth Boundary (UGB) which encompasses sufficient land to accommodate 20 years of projected urban growth of housing, commercial and industrial lands, and infrastructure. Goal 14, Urbanization, promotes efficient use of urban lands to prevent sprawl and support livable communities (Sullivan and Eber, 2010). The UGB is evaluated every five years to determine whether expansion is required. As UGBs are expanded over time, state law requires prioritization of the lands added to them, with the best agricultural and forest lands at the bottom of the list and thus the least available for non-agricultural uses (Metro, 2016).

In 2007, the state passed further laws creating a process for a more complex UGB growth management system for Metro (the regional government for the Portland metropolitan area encompassing Multnomah, Washington, and Clackamas Counties and their various cities). Under this new system, the UGB remains the same – a boundary to accommodate 20 years of urban growth – but outside of the boundary, some lands may be designated as rural reserve lands and others as urban reserve lands. Urban reserve lands are those intended to accommodate 30 years of additional growth after the 20-year timeline encompassed by the UGB. Growth into urban reserves is only allowed once UGB lands have been developed. Complementary rural reserves are designated as well: lands in which urban expansion will not be allowed for the same time period. In other words, although the UGB system remains intact, the region is essentially designing with a projection for 50 years of urban growth. Urban and rural reserves do not change the zoning or rules regarding the lands they encompass, but rather provide longer-term...
Farmland Preservation Using Ag Systems Planning

certainty about the anticipated future uses of the land. Lands outside the UGB that remain undesignated (neither urban nor rural reserve) are of lower priority for UGB expansion than urban reserves, but are less protected from urban development than rural reserves (Metro, 2016; Walker and Hurley, 2011).

A major impetus for the development of the urban and rural reserves were challenges with the way new lands were chosen for inclusion into an expanding UGB. Under the old UGB system, growth was required to progress along the lowest-value agricultural land; it provided guidance on where not to develop, but little guidance on selecting good areas for development (Metro, 2016). This led to various problems. For example, the lowest-quality agricultural lands might also be prohibitively expensive to develop due to topography, proximity to existing municipal services, or other factors. This was less of a concern in the 1970s when more federal funding was available for municipal expansion, but today it means that lands may be included in the UGB which are functionally and/or financially undevelopable under current conditions (Walker and Hurley, 2011). Furthermore, re-evaluating the UGB every five years was cost- and labour-intensive, and left communities along the edge of the UGB with some degree of uncertainty over their future, making investment difficult (Metro, 2016). The selection of rural and urban reserves is based on a more complex set of factors than just land quality (more on this later).

5.7 Measure 37 and Measure 49

Any discussion of land use planning in Oregon would be remiss to fail to mention Ballot Measures 37 and 49. In combination, these ballot measures acted as a temporary deviation from Oregon’s land use planning system, with Measure 37 dismantling certain aspects of the planning
system and Measure 49 largely reinstating them. A brief account is offered here for context, although their ultimate impact on the indicators investigated are not significant to the scope of this study.

Oregon’s legal system allows for ballot measures: with a sufficient number of signatures, any member of the Oregon public can put a ballot measure to the public in a general election. This gives the public the ability to negate any bill passed by the Legislative Assembly, and to create new laws, essentially bypassing the Legislative Assembly. Ever since SB 100 and SB 101 passed in 1973, anti-planning groups have attempted to undo or weaken the land use planning system through ballot measures. By and large, these measures have failed (most by popular vote, one by winning the vote but being overturned by the Oregon Supreme Court) (Walker and Hurley, 2011). In 2004, however, Ballot Measure 37 passed with a strong margin at 60.6% (Walker and Hurley, 2011). Measure 37 essentially allowed property owners whose property value had been negatively affected by a change in land use regulation to make a claim against the local or state government responsible for the change. If the government did not make compensation within two years, the property owner could use the property in any way in keeping with the regulations in place at the time they had purchased the property (Walker and Hurley, 2011).

Measure 37 was in many ways an attack on the fundamental concepts of Oregon’s land use planning system. On the surface of it, this seems fair to many people; the “yes” campaign for Measure 37 had strong spokespersons with stories of long-time farmland owners simply wanting to divide the property they’d owned since before 1973 amongst their children, and now being unable to (Walker and Hurley, 2011). Passing Measure 37 made some such divisions possible.
The effect on the ground was that Measure 37 opened a great deal more land to potential development, particularly the sort of low-density rural residential development that the planning system had been intentionally designed to reign in. Furthermore, while the pro-Measure 37 campaign largely focused on the rights of individual (and often elderly) landowners who simply wanted to build an additional house for a family member on their land, in reality almost two thirds of the land under Measure 37 claims was owned by large-scale owners, some seeking to build subdivisions, shopping malls, open pit mines and other industrial parks in agricultural or forest lands (Walker and Hurley, 2011). In the Willamette Valley, 36.5% of Measure 37 claims were on land zoned for exclusive farm use (Martin et al., 2007). Because local governments could not afford to pay the compensation, which would have totalled $19.8 billion dollars statewide (DLCD, 2007), the land use regulations were waived in every case in the state but one (Walker and Hurley, 2011).

Many Oregonians soured on Measure 37 once its implications became clear. Measure 49 was put to the public vote in 2007 and won with an even higher majority, 62.1% (Walker and Hurley, 2011). Measure 49 essentially overturned and restricted the impact of Measure 37: commercial and industrial land uses would not be allowed on land zoned for farms, houses, forests, etc., and subdivisions would not be allowed on high-value farmlands, forestlands, or other environmentally sensitive lands. Claimants were restricted on the number of houses they could build on one property and the bar for demonstrating harm to property value due to regulations was raised (Walker and Hurley, 2011). In 2011 the Department of Land Conservation and Development reported that the majority of Measure 49 claims were for adding 3 or fewer home sites to an existing rural property: more than would be allowed under the land use
planning system normally, but an impact smaller in both scale and total effect than would have been allowed under Measure 37 (DLCD, 2011). As of 2011, 3734 new dwellings were permitted in Willamette Valley counties under Measure 49 claims; 1145 of these were in Clackamas county alone (DLCD, 2011).

The full story of Measures 37 and 49 is fascinating and holds many lessons regarding politics and land use planning highly worthy of study. Measure 49 has allowed more rural residential development than would have occurred had these two measures never passed. However, this development is allowed essentially as exceptions to the planning system. Given that Measure 49 restored Oregon’s planning system to almost its pre-Measure 37 state, it is not very relevant for this research and no further discussion will be presented on this period.

6 Evidence of an “agricultural systems” approach in Oregonian law and policy

Using the agricultural system framework described earlier, strong evidence can be found – particularly in recent years – of an agricultural systems-based approach to planning for agriculture in Oregon. Some of this evidence is described below.

6.1 Oregon’s legal statutes

Oregon’s agricultural policy, created by the original senate bills in 1973, is stated in Oregon’s Revised Statutes, section 215.243. This law sets the legal framework for restrictive agricultural land use policies by arguing that agricultural land provides “physical, social, aesthetic and economic” benefits to “all of the people of this state” (Or. Rev. Stat. § 215.243 S1). It further states that because of this, certain privileges and incentives to agricultural land owners are
justified – creating the possibility of property tax rate reduction. The entire section is not long and remains the same as written in 1973. It does not mention all components of an agricultural system identified in the model used for this research, but it does make reference to agricultural land (in stating that a maximum of farmland must be preserved (Or. Rev. Stat. § 215.243 S2)), farm businesses (by stating that “preservation of such land in large blocks is necessary in maintaining the agricultural economy” (Or. Rev. Stat. § 215.243 S2) and that expansion of urban areas into rural areas causes conflict between farm and non-farm uses (Or. Rev. Stat. § 215.243 S3)), and farm families (in making the case for “incentives and privileges” (Or. Rev. Stat. § 215.243 S4)).

6.2 Oregon’s statewide planning goals and guidelines

Goal 3 of Oregon’s statewide planning goals and guidelines, to which local governments are required to adhere in their comprehensive plans and planning decisions, states that “agricultural lands shall be preserved and maintained for farm use” (DLCD, 2010, p.). Various requirements are set out here, including minimum lot sizes and zoning. Again, there is evidence that agricultural land and farm businesses have been considered. Infrastructure is also mentioned: local governments are directed both to provide services (such as sewer and water) appropriate for farms, and not to provide or connect services beyond what is necessary for the approved farm and non-farm uses in the area (DLCD, 2010) (the implication being that this could encourage inappropriate development or problematically inflate land values).
6.3 Metropolitan Portland’s urban reserves and rural reserves

Perhaps the strongest evidence of a systems-based approach to planning for agriculture in Oregon is found in the selection of the rural and urban reserves around the Metro Urban Growth Boundary in the late 2000s. The law that allowed Metro to establish urban and rural reserves was passed in 2007 (Walker and Hurley, 2011), and the associated administrative rules were developed shortly thereafter.

The administrative rules regarding the establishment of rural and urban reserves lists certain factors that must be considered in the selection of lands for reserve designation, both rural and urban. For rural reserves, these factors include “capability” factors, such as soil and water access, and “suitability” factors, which includes considerations of surrounding land use patterns and potential conflicts and buffers, the agricultural infrastructure in an area, and the farmland lot fabric, parcel sizes, land tenure and ownership patterns (see Oregon Administrative Rules [OAR] 660-027-0050 and 660-027-0060). This arguably touches on all elements of the agricultural system as defined for this research, and shows that at least in terms of rural reserve selection, a robust systems-based approach is mandated by Oregon law.

To inform the selection of the rural reserves, the Oregon Department of Agriculture conducted a detailed investigation into the farmland around Metro’s UGB. The final report, published in 2007, divides this farmland up into 20 subregions, some smaller than 5,000 acres, (based on topography, use patterns, buffers and edges) and evaluates each one based on the same factors identified in the statutes. Input data was drawn from field work, a range of technical data (including topography, soils, zoning, water rights, lot fabric, tenure, and aerial photography), and consultation with local planning agencies, soil and water conservation
districts, and farmers. A detailed analysis of each of the subregions is provided, and they are ultimately classified as:

- **Foundation Agricultural Lands** – subregions in which agriculture is very active and has strong potential for longevity. These lands are vital to the larger agricultural sector.

- **Important Agricultural Lands** – subregions which are well suited to agricultural production and have the potential to be Foundation Agricultural Lands, although they may not be used to their fullest at present.

- **Conflicted Agricultural Lands** – subregions in which agriculture faces more long-term challenges, typically not because of its capacity (almost all excellent), but because of suitability issues that make agriculture more difficult. They could become Important Agricultural Lands if certain circumstances changed.

Figure 20 shows the results of the analysis.
Rules put into place by LCDC (referenced in the aforementioned statutes) specifically cite this report and encourage counties to include Foundation Agricultural Lands in rural reserves. If a county wishes to include Foundation Agricultural Lands in urban reserves, on the other hand, they must be able to make a convincing case for doing so using the analysis factors identified in the statutes (OAR 660-027-0040 S.11). In this way, a holistic, systems-based approach to planning for agriculture in the Metro region is written directly into Oregon’s policy. Figure 21 shows the designation of rural and urban reserves as they stand today.
This level of analysis is not straightforward. The primary author of the ODA report, Jim Johnson, indicated that he dedicated half to three-quarters of his time for approximately 9 months to the data analysis, conclusions, and writing it required (personal communication). He was supported in field work and data collection by staff from a soil and water conservation district in the area who were paid for by Metro Portland. The number of agencies, extensive amount of staff time, and level of detail that went into the final report demonstrate a high level of commitment to a systems-based approach.
6.3.1 Implementation failures

While the urban and rural reserves system embodies a strongly holistic approach that appears to balance the needs of urban and rural regions while maintaining a land-conservationist core, there were serious problems with its implementation. This is another complex story worthy of its own detailed study, but it will be discussed here in brief. From 2009 to 2011, Multnomah, Clackamas, and Washington counties worked together with Metro Portland in a complex, publicly engaged process to identify their urban and rural reserves. The ODA report discussed above was an input to this process. Their selections were submitted to LCDC, who, after requiring Washington to re-evaluate and re-submit, ultimately approved all three maps, making them law (Metro, 2016). A group of complainants, however, took these decisions to the Oregon Court of Appeals, who eventually ruled that there were problems with all three counties’ selections. Multnomah and Clackamas were required to re-assess certain parts of their maps (which remain undecided – see pink regions in Figure 21), but Washington’s map was thrown out altogether. The Oregon Court of Appeals decided that Washington County had used “pseudo factors” in their decision making, that they had twisted the factors they were required to use by both law and policy beyond the point of law. This would have put Washington County back to the beginning of a multi-year, multi-million dollar process (Minstreanu, 2014).

At this point, the state Legislature stepped in and brokered an addition to House Bill 4078 in 2014, which simply used a new law to re-draw Washington’s urban and rural reserves map, redefining the urban and rural reserves and expanding the UGB, totally superseding the process outlined for that in the 2007 law and associated policies (Gaston, 2014). House Bill 4078 was
called a “grand bargain” because it was supposed to be a compromise of sorts between development interests, farmers, environmentalists, and other groups (Gaston, 2014).

There is no doubt that this story represents a failure at the local level of government; the Oregon Court of Appeals decision makes that clear, and there are allegations of private development interests influencing political processes. Regarding this sort of influence, one interviewee said, “Washington County is the worst. ... And it’s really because of three commissioners who are paid by developers, and you can put that in your report” (Interviewee 10). Interpretations of the grand bargain itself vary, even amongst advocates of the planning system. Some see it as a crude but necessary correction to the failure of local governments, which returned some valuable agricultural land to rural reserves (even if it gave up too much land in the expansion of the UGB) (Miner, 2014). Others, including some interviewees, see it as a shady deal whose compromises were too opaque, which gave too much over to private development interests, and which should never have happened because it was totally outside the established channels for this type of decision-making.

7 Critiques of the system

As successful as Oregon’s land use planning system has been, it of course has its critiques and challenges. There is a faction that believes the entire land use system is problematic at best, anti-constitutional at worst, based on an individual-centric understanding of property rights. As these arguments are based on first principles rather than concerns with the specifics of the policies themselves, they will not be addressed here. Rather, a few of the major concerns regarding the letter and implementation of Oregon’s land use policies are discussed below.
7.1 Shadow conversion

Shadow conversion occurs when agricultural land is effectively taken out of production without the zoning being changed. This is a significant concern in the Willamette Valley of those intimate with the planning system. One reason for shadow conversion is poor (or complete absence of) succession planning: Oregon’s average farmer age is 60, and farms without effective succession plans are susceptible to underutilization once they are passed on (Brekken et al, 2016). Another concerning cause of shadow conversion is “lifestyle” farms or luxury rural residential development. A few policies attempt to address this: minimum lot sizes of 80 acres on land zoned for exclusive farm use were intended to keep the use of that land agricultural, and in some cases, the construction of a new dwelling on agricultural land requires a demonstration of minimum farm income in prior years or an approved farm management plan (Oregon Administrative Rules 660-033). However, enforcement of farm management plans is difficult: some interviewees cited landowners installing a perennial crop such as Christmas trees or blueberries, sufficient to get their farm management plan approval, but not following through on managing, harvesting, or marketing the crop (Interviewees 13, 17). And no matter how high minimum lot sizes are set, there will always be someone wealthy enough to purchase it to use simply as a rural retreat rather than productive land. (This level of wealth likely was not contemplated when minimum agricultural lot sizes were set in the early 1970s.) Finally, there is good agricultural land in lots below the minimum lot size, which are often preferable for small farmers such as those growing vegetables and fruit for direct sales (Interviewees 01, 04, 05, 11). However, policy cannot easily distinguish between small farms and luxury rural residential
development, which can lead to policymakers struggling to balance creating barriers for farmers with being overly permissive of luxury rural residential land use.

7.2 “Inclusive” Exclusive Farm Use (EFU) zoning

Exclusive Farm Use (EFU) zoning restricts what non-agricultural land uses are allowed on the highest class of agricultural land in the state to those specified on a list. Some argue that this list has expanded far too much over time, jokingly referring to it as “Inclusive Farm Use zoning” (Interviewee 13). It is difficult to understand why aerial fireworks display businesses, model airplane launch and landing strips, and dog boarding kennels, for example, are considered defensible uses of EFU farmland (see Or. Rev. Stat. § 215.283).

Cumulative impacts on agriculture

Further to the concern of EFU zoning being too lenient, although some of the allowed uses do come with stipulations that they must not cause significant changes to practices or costs of surrounding operations, several interviewees raised the concern of cumulative impacts (Interviewees 01, 02, 03, 08). Although it may be hard to argue that one non-farm use has a negative impact on farming in a region, it is logical that an excess of non-farm uses will have such an impact (for example, through traffic, increased land values, or trespass). While there is some language surrounding cumulative impacts to agriculture in Oregon’s land use rules, many observers are concerned that in reality the cumulative impacts of multiple non-farm uses in a region is not well considered. The question of negative cumulative impacts is very hard to define and prove; nevertheless, the lack of thorough consideration of cumulative impacts is a concern which DLCD and others are currently wrestling with, particularly as agritourism becomes more popular (Interviewee 02).
7.3 Lack of regional planning and inconsistent implementation

While Oregon is known for many elements of land use planning, widespread regional planning is not one of them. While the Metro Portland government coordinates the planning of the 3 counties and 24 cities within its boundaries (Metro, 2016), it is the only regional planning organization in the state. Land use planning is otherwise implemented at the county and city level, which can lead to poor coordination between areas that may function in some ways as a region. Furthermore, with each city managing its own UGB, there is no way to regionally allocate growth, to consider whether growth should be allowed in all cities or whether it should be encouraged more in certain, less environmentally/agriculturally/silviculturally valuable areas. Some interviewees cited lack of regional planning as a weakness of the system (Interviewees 01, 13).

Furthermore, the local implementation of state rules can be inconsistent. These inconsistencies can range from what types of development proposals are approved on farmland, to variation in planning application fees, to how much support a county’s elected representatives show towards agriculture (interviewees 02, 04, 17). Several interviewees cited this inconsistency as a weakness of the planning system, and a few even specifically raised the issue of commissioners (elected officials) making planning decisions that went against state planning rules on a regular basis, some because of personal interests in development (Interviewee 10). One interviewee was so concerned about certain local planning decisions in her county that she and a group of collaborators were considering taking their story to state government officials, because they believed that good state laws and regulations were being undermined by poor
local implementation and they were not convinced that those in the state capital knew what was happening on the ground (Interviewee 14).

One interviewee thought that DLCD had not been living up to its role as a regulator in recent years, allowing some “egregious” local planning decisions to slide by which he believed DLCD ought to have taken a stand against. He believed that DLCD has been “afraid of the legislature for a number of years now” (Interviewee 08), fearing budget cuts in response to unpopular decisions or stances. If true, this could be contributing to inconsistent implementation of planning rules across the state.

7.4 **Inflexibility**

Oregon’s planning program has been called inflexible by many over the years (see Gosnell et al, 2011); it is true that its general structure has remained the same since the 1970s, despite many changes in agricultural and social context (e.g. digital communication, increased demand for direct-marked products, many changes in style and focus of production in the Willamette Valley). One interviewee said that she liked the description of Oregon’s planning system she heard someone give at a presentation, likening it to a house built in that era that has not been updated: “it has good bones, but the shag carpeting has to go” (Interviewee 04). Several interviewees said they wished the system could be more flexible, particularly when it came to small scale farmers (Interviewees 04, 05, 11). Elements of the system create barriers to small scale farming: 80 acres as a minimum lot size is far too big for certain types of production such as direct-sale vegetables and fruit, which is a sizeable industry (see section 4.4.4 Wholesale and direct farmer-to-consumer marketing and distribution), and housing can be hard to find for farmers and farm workers in some rural areas. (Not all small agricultural lots have dwellings on
them and getting permitting to build dwellings can be difficult in some cases.) However, all of these interviewees also acknowledged that making changes to allow greater flexibility for small scale growers would be problematic, and many said that although they wanted change they would be hesitant to make it; it would likely result in more luxury rural residential development. Again, policy cannot readily distinguish between small scale farming and luxury rural residential land use.

7.5 **Susceptible to political challenges**

As discussed above, local implementation issues can stymie good state-level policies. These issues can range from lack of resources or capacity all the way to undue local political influences or corruption. Washington County’s failed designation of the rural and urban reserves is one example of local implementation challenges. Oregon’s planning system is also susceptible to overall political challenges. Several interviewees said they feel like the system has been “under constant attack” since it was implemented, and that advocates of the planning system are always playing defensive (Interviewees 03, 08, 13). As Sullivan and Eber (2010, p. 3) put it: "Legally, it is sound; on the ground, it is effective. Politically, it is constantly being challenged and has been continuously updated to address changing conditions, situations, and public sentiment."

One could argue that these defenses have generally been successful, given the ongoing status of the planning system. Nevertheless, the passing of Measure 37 was an indication of the power of Oregon’s ballot measures. This unique system arguably creates more opportunity for political challenges to the system, and it has been used this way many times since the 1970s, albeit mostly unsuccessfully (Walker and Hurley, 2011; Sullivan and Eber, 2010).
7.6 Lack of permanent protection

The goal of Oregon’s land use planning system is to control and direct growth, not to stop it (DLCD, no date a). It does not contain a mechanism for permanent land protection. This has some observers concerned, as population growth continues unabated in the Willamette Valley and particularly in a handful of areas such as the Metro region. In recent years, there has been increased conversation about other rural land protection strategies, such as working land conservation trusts (which are generally understood to be permanent). While such trusts are widespread – indeed, the primary mechanism for farmland protection – in some states, they are quite rare in Oregon and have not received much public funding; some interviewees said they thought this could be in part because Oregonians have been “resting on the laurels” of the land use planning system (Interviewee 10). In July 2017, the Oregon House and Senate passed a bill creating Oregon’s first “voluntary land protection program”, the Oregon Agricultural Heritage Program, which will support the expansion of strategies such as conservation trusts (Coalition of Oregon Land Trusts, 2017). Strategically located farmland conservation easements along Urban Growth Boundaries could certainly be a powerful tool to drive growth away from very high value agricultural regions that happen to be close to urban areas, although of course it is not yet known how the implementation will play out. This development notwithstanding, some remain concerned that there is no point in Oregon’s planning system at which the question is asked, “should certain of these forestlands or farmlands remain rural lands forever?” (Interviewee 08, Coalition for Oregon Land Trusts, 2017).
8  Is policy the reason for Oregon’s success?

Despite the concerns and critiques described above, both the general consensus in the literature and the indicators studied for this report suggest that Oregon has been successful in preserving rural lands and maintaining a strong agricultural system. But are Oregon’s policies the reason for this success?

While of course this is a complicated question, and there are many contributing factors to Oregon’s rural land preservation, there is no doubt that Oregon’s policies are an important part of the story. This is borne out in the literature: many researchers agree that, at the very least, it can be safely concluded that Oregon’s land use planning system has resulted in less conversion of rural lands to urban uses than would have occurred in its absence (see Gosnell et al, 2011; Ingram and Hong, 2009; Kline et al., 2014). When asked how effective they thought the land use planning system has been in supporting agriculture in the Willamette Valley, every interviewee gave a positive response while also acknowledging some things that could be improved, giving responses such as a seven or eight out of ten, a grade of B-, or proclaiming it “very effective”. One interviewee said, “I think it’s one of the best you’ll find anywhere in the world, but it’s still not good enough” (Interviewee 01). Another said: “Not as well as some European countries, but as well as anyplace in the United State. Better, in my estimation” (Interviewee 03).

Furthermore, some expert interviewees said that although land banking-type speculation certainly happens along UGB boundaries, they think it occurs to a lesser extent in Oregon than is seen in some other places because the gamble that the land will be approved for conversion to urban uses is greater (Interviewees 01, 03). Of greater concern appeared to be the issue of
investment-motivated purchases of farmland (including by large companies) for its investment value as farmland (Interviewees 01, 10, 13).

There are also some success stories that are attributed quite directly to the planning system. One example of this is the wine region in the Dundee Hills, just southwest of Portland. Today Oregon is known for its international award winning wines, in particular its pinot noirs, but this industry was in its infancy in Oregon when the planning system was developed in the early 1970s. At that time, the Dundee Hills area was in agriculture, but was not particularly well protected, as the hillside soils tend to be of lower classes and quality. However, grapes actually prefer this marginal hillside soil, and when Yamhill County was developing its comprehensive plan for compliance with the new planning system, the pioneer grape growers worked with county officials to identify and map the potential of this region and afford potential grape-growing areas stronger protection (Oregon Public Broadcasting, 2012). Because of its proximity to major urban areas, looser zoning prior to the land use planning system, and certain agricultural market factors at the time, this area almost certainly would have been developed into rural residential estates (Interviewee 13). Instead, today it is home to one of the wealthiest agricultural regions in the state, produces pinot noirs that have beaten top French wines in international competitions, and adds economically to the state through both agricultural and wine-related tourism. Wine Enthusiasts magazine named the Willamette Valley the “Wine Region of the Year” in 2016 (State Board of Agriculture, 2017, p.23). As one interviewee put it bluntly, “without our land use planning program, we wouldn’t have a wine country” (Interviewee 13).
A similar story was told by another interviewee about the Hood River Valley. Just east of Portland, up the Columbia River Valley, the area is visually stunning and a gateway to the Mount Hood skiing and recreation area. The valley is also a major fruit-producing region, known especially for its pears. Given the combined pressures of its proximity to major urban areas and to popular skiing destinations and its visual appeal, the region was ripe for rural residential and second home development when the planning system was established in 1973 (Interviewee 03). Yet today, although a few residences have been added, the Hood River Valley remains full of productive orchards. In the North American context, it is easy to imagine a very different outcome for this region had strict protections for high value agricultural land not been put in place when they were. One interviewee said, “that valley would no longer be a producer if it hadn’t been for the statewide land use planning system” (Interviewee 03).

There are other factors to Oregon’s success with preserving agricultural lands and supporting its agricultural system. Some important ones to consider are discussed here.

8.1 1000 Friends of Oregon

1000 Friends of Oregon is a non-profit non-governmental organization that has played a key role in defining, defending, and maintaining Oregon’s land use planning system. Its purpose is to defend the outcomes of the land use planning system (e.g. protected resource and natural lands, vital and liveable urban areas), rather than any particular policy (Interviewees 08, 16). It was established in 1975 because the early proponents and architects of the land use planning system knew it needed a watchdog group. In its early years, 100 Friends played a largely legal role, presenting to city and county councils, but also taking them to court for non-compliance with the new state rules, where it developed a reputation for winning the vast majority of its
cases (Interviewee 03, 16). It played a key role in shaping the system by choosing its battles and forcing certain legal precedents. A key staff member at 1000 Friends of Oregon believes there is a noticeable difference in the clarity and enforcement of goals that the organization litigated on in the early years (e.g. Goal 3: Agricultural Lands) compared to those which they did not (e.g. Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces) (Interviewee 16).

1000 Friends of Oregon has also played important roles in public education and advocacy over the years, combining hard courtroom tactics with “soft diplomacy” that built alliances between Republicans, Democrats, developers, industry representatives, farmers, and others (Walker and Hurley, 2011, p. 70). It is difficult to have a conversation about Oregon’s land use planning system without discussing 1000 Friends, and several interviewees mentioned it, attributing the success and longevity of the land use planning system in part to the organization. As one particularly knowledgeable interviewee stated: “It takes a government, it takes the citizens, and it takes a watchdog group to make sure it really works” (Interviewee 03). Another put it even more bluntly: “If [1000 Friends of Oregon] weren’t here, the [land use planning] program would probably be gone. ... I really think they’re crucial” (Interviewee 13).

8.2 Agricultural considerations

A strong agricultural sector helps to maintain farmland in agriculture. Agriculture in the Willamette Valley is quite strong for a number of reasons, beyond simply strong farmland protection policies and associated property tax benefits. As previously discussed, the soils and climate are highly favourable, and under simple hoop house/high tunnel structures some crops can be grown year-round. The region also has excellent transportation links to external markets through the regional highway network and the Port of Portland, which provides ready access to
large and growing Asian markets. Furthermore, a farmer interviewee attributed some of the success of farmers in her region to the “institutional support network”, which she said includes farmers’ market associations, soil and water conservation districts, and the many extension services offered through the public universities (Interviewee 11). Oregon now has dedicated extension services for small farms, organic agriculture, trees and woodlots, and even home gardeners. The extension services are well known and appear to provide valuable resources to farmers, providing information through conferences, workshops, publications, and consultations, and partnering on field-based research (for example, see Oregon State University Extension Service, no date).

8.3 Cultural context

Both agriculture and land use planning itself feature largely in Oregon’s culture and identity. One interviewee said, “it’s part of the Oregon myth: land use and public beaches” (Interviewee 14). (The land use planning laws followed six years after another famous Oregon law reserving all coastal beaches in Oregon for public access and use, championed by the same charismatic Republican Governor, Tom McCall (Walker and Hurley, 2011).)

Agriculture is part of the very founding myth of the state, featuring prominently, along with forestry, in murals in the state capitol. It remains a major sector in the state’s economy, ranking first in volume of exported products and third in value of exported products (ODA, 2007). Oregonians support farmland protection, as was seen in the passing of Measure 49 to reinstate most of the land use regulations that were removed by Measure 37 once their negative implications became clear (Walker and Hurley, 2011). Surveys conducted in 2013 found that a majority of Oregonians support “protection of productive farm and forestland from
development” and the channelling of new development toward existing urban areas rather than rural lands (Oregon Values and Beliefs Project, 2013).

Although the Willamette Valley is densely populated and contains the largest cities in the state, it is home to fewer than three million people. Perhaps this relatively low population and the relative size of the agricultural industry contribute to the fact that agriculture seems to be relatively prominent in the public consciousness. One interviewer said, “I can’t speak for what it feels like in Portland, but in the rest of the Valley, it still feels like everybody’s got some connection to agriculture in a way that feels real” (Interviewee 14). Even the city of Portland seems to have a strong connection to farming for a city of its size: it has extensive, grower-focused, world-famous farmers’ markets, and its restaurants are an undeniable locus of the farm-to-table movement in American cuisine. As another interviewee put it, “the importance of food and agriculture in this state is pretty heavily ingrained in our culture” (Interviewee 12).

This is something of a chicken-and-egg situation: is the public aware of agriculture and amenable to policies which support it because of the strength of the industry, or vice versa? It likely works in both directions to some extent, but it is safe to say that this cultural context contributes to the success of the agricultural industry and the positive indicators of the agricultural system described earlier.

9 Lessons for Ontario

9.1 Differences in context

There are some important differences in context between the Willamette Valley and the Greater Golden Horseshoe. An obvious one is simply demographic: the GGH is home to
approximately three times the population of the Willamette Valley, and its urban centres are significantly larger and more populous. The GGH is home to four of the ten most populous cities in Canada; Portland, the largest city in the Willamette Valley, does not crack the top 20 list in the United States. The GGH is also the biggest destination for international immigrants: over one third of Canada’s foreign-born population lives in the Toronto census metropolitan area (Statistics Canada, 2013) and half of the residents of the city of Toronto were born outside Canada (City of Toronto, no date). While the Willamette Valley is certainly a destination for immigrants, it is not to the same scale as is seen in the GGH. By sheer numbers alone, the GGH is more urban.

These demographics likely contribute to the difference in cultural contexts. Several interviewees described their concerns that the Oregonian public’s understanding of and connection to agriculture was decreasing as the population ages and changes, and their uncertainty about how to better communicate the story of Oregon’s agriculture and land use planning to the public, and in particular, to new residents of Oregon (Interviewees 03, 08, 10, 13, 16). The GGH is likely experiencing a similar trend, although for various reasons (including its highly urban population, lack of such an intensely agricultural founding myth, and the smaller role that agriculture plays in its economy), the public understanding of and connection to agriculture in the GGH is likely lower to begin with.

The political systems are another difference worth considering. Oregon has quite a strong degree of citizen engagement in its political process: two citizen interviewees had themselves drafted or contributed to bills which went before the legislature (Interviewees 10, 15), and another interviewee who had served in a variety positions in the public service during his career
said that he liked Oregon better than the east coast, where he grew up, because “there's very little corruption. The political processes are much more open. Politicians are much more accessible. A citizen can come down to a legislative session, get a sponsor for a bill, and pass the damn thing” (Interviewee 03). Citizens can even initiate binding public ballot measure votes, as was used to gut the land use planning system with Measure 37 and then reinstate the majority of it with Measure 49. By contrast, much of Ontario’s land use planning happens through policy written by ministries rather than through legislation which is publicly debated. Both expert and public consultation typically occur as part of policy development in Ontario, but the process is more opaque. While Ontarians vote for one provincial representative, Oregonians vote separately for their representative in the state house of representatives, in the state senate, and as governor. Since 1987, Oregon has had a Democratic governor no matter the house and senate composition. Governor Kitzhaber earned the nickname “Dr. No” for vetoing so many Republican bills, some of which would have reformed the planning system (Interviewee 03). The governor’s veto power has contributed to the land use planning system remaining intact for so long.

9.2 Lessons

Despite these and other contextual differences, however, the parallels between the Willamette Valley and the GGH are strong, and many lessons can be taken from Oregon’s experience.

9.2.1 Agricultural systems planning is possible, and it requires resources

The Metro urban and rural reserves system implemented a new, more robust and multi-factorial approach to designating lands for rural protection and lands for eventual urban
development. It took a strongly agricultural systems-oriented approach. This demonstrates what is possible. It also required a great deal of resources in staff time, data, and public engagement to make it happen. Systems-based planning is complex, but done well, it should be able to come up with better approaches to land use planning. (It will of course be important to monitor the outcomes of the relatively new urban and rural reserves system over time.)

Systems-based planning can also be done poorly, as the implementation struggles of the urban and rural reserves, particularly in Washington County, demonstrate. Whether they are caused by lack of capacity, unclear communication, or undue local politics or development influence, implementation problems for complex policies can be very expensive. A well-intentioned program without the appropriate resources will fail. Potential pitfalls and mitigation strategies should be considered early and thoroughly.

9.2.2 **Firmer, rational urban growth boundaries create greater land use certainty**

The success of agriculture in close proximity to urban boundaries in the Willamette Valley is testament to the power of firm and predictable urban boundaries to mitigate and reduce impermanence syndrome. In the GGH, the Greenbelt cannot be considered comparable to an urban growth boundary because it is too large and located too far away from the edges of growing urban areas. Municipalities in the GGH use zoning to separate urban from rural land uses, but suburban land use patterns in the GGH suggest that these boundaries are expanded more readily than in the Willamette Valley.

Oregon’s pattern of farmland ownership rates also suggests the speculation-reducing power of the urban growth boundaries. In the GGH, the general rule is the closer a region is to growing urban centres, the lower the farmland ownership rates. Ownership rates are higher in
the Willamette Valley than the GGH overall, and they do not follow this pattern (see 4.4.1.3: Percentage of farmland owned vs. rented), suggesting that influences other than impermanence syndrome and land banking are stronger and/or that Oregon policy is curbing impermanence syndrome. Influences on land ownership are many and complex and this hypothesis would require further investigation, but the difference in patterns is worthy of consideration.

One expert also commented on the importance of land use planning rules being rational and comprehensible to discouraging land speculation along Urban Growth Boundaries: “The more you can show that these decisions are going to be made on an objective, factual-based nature instead of a political nature, ... the more people are going to think twice before they [speculate on development]” (Interviewee 01). Based on the degree of speculation that is happening on GGH farmland at the moment (Advisory Panel, 2015), urban boundaries in Ontario could stand to be made both firmer and more rigorous and rational.

Finally, urban and rural reserves as a planning tool could be considered for implementation in Ontario. They may allow for longer-term projections of areas for development and areas to remain in agriculture, and in so doing could help to curb impermanence syndrome around growing urban areas.

9.2.3 Citizen engagement and support is critical

Citizen engagement has arguably been critical to the creation and success of Oregon’s land use planning program, although several interviewees said they were concerned that citizen engagement has been decreasing in recent years (Interviewees 03, 08, 16). In any political system short of a dictatorship, relatively strong and broad public support is required for the longevity of any land use planning program, and as land use patterns change slowly on a political
time scale, longevity is a requirement for success. In Ontario’s system, given that the policy
development process is more opaque and land use planning does not feature as prominently in
the public consciousness as it does in Oregon, citizen engagement is likely to be more of a
challenge to develop and maintain. In the GGH, there is also significant frustration with land use
issues such as increasing traffic congestion, housing prices, and regulations on farmland. There is
conflicting messaging around the relationship between such issues and land use planning
programs such as the Growth Plan and Greenbelt Plan, which could further threaten citizen
engagement and support of land use planning programs. These challenges ought to be
addressed directly.

9.2.4 A watchdog is important

1000 Friends of Oregon has played a unique and critical role in the development,
enforcement, and preservation of Oregon’s land use planning system. While many non-profit
groups engaged with land use planning and agriculture are active in Ontario, none acts as a
watchdog in quite the same way. Ontario has a less litigious approach to policy development, so
the role of a watchdog group may take a somewhat different form here; nevertheless, it could
be beneficial in addressing local implementation issues and keeping the public interest and
overall policy goals at the forefront.

9.2.5 Strong rural planning and strong urban planning are mutually dependent

Although urban planning was not the focus of this study, it bears mentioning because
good urban planning is complementary to strong rural planning. When asked what the greatest
Farmland Preservation Using Ag Systems Planning

successes of the planning system were, some interviewees cited the fact that it is comprehensive. As one interviewee put it:

[The land use planning system] is not just about protecting farmland, or it's not just about effective urban growth, or it's not about delivery of services in an efficient way ... it's about all of those things working together. I've always said that the Exclusive Farm Use zone is only as good as effective urban planning is, because if you waste your land inside your Urban Growth Boundary, then there's just going to be pressure to expand that Urban Growth Boundary. On the other hand, if you do great urban planning but you don't have farmland protection or good rural planning, where people can just leapfrog out there and develop ... then you're going to start to waste land in the urban growth boundary and have a push-out, which costs cities more for providing infrastructure and the like. City of Portland's downtown is one of the most viable I've ever been in for a city of that size. It's because people want to be there because there [aren't] clusters outside on the edges that are taking away from that.

(Interviewee 01)

While this study did not investigate Oregon’s urban planning policies in detail, the interviewee above describes a common observation that Oregon’s cities have a certain vitality that the downtowns of cities in other states with less stringent planning rules and a tendency towards urban sprawl lack. Even to a casual observer, downtown Portland, a city of some 500,000 people, feels vital, pedestrian- and cyclist-friendly, economically active, and innovative.

Some regions of the GGH have a long legacy of suburban sprawl to contend with, but developing these and all urban areas into reasonably dense, liveable, appealing, human-scaled
communities is just as important to preserving GGH farmland as is protective farmland zoning and right to farm legislation.

**9.2.6 Land use planning is not enough**

Building on the last point: land use planning on its own not sufficient. There are many pressures on farmland and many tools that can be used to protect it from inappropriate development, but ultimately, if farmers cannot make a living farming, their land will always be threatened. Farmers’ profitability is an extremely complex issue with influences as broad as global wholesale markets, weather, and climate change. Land use planning can assist with farmers’ profitability through supportive zoning, but it cannot guarantee it. Several interviewees said that even though they think the Willamette Valley is one of the best places to make a successful go of farming in the United States, farming remains a very challenging financial proposition. If Ontario is genuinely interested in preserving GGH farmland through land use policy, it must also use other tools to support farmers in their work. Examples from Oregon include dedicated extension services, public transportation infrastructure, and support for agencies such as Soil and Water Conservation Districts.

**10 Conclusions**

While it has not been perfect and continues to evolve and face challenges, the land use planning system in the Willamette Valley has had many successes over its 44 years of experience, and it holds many valuable lessons for the Greater Golden Horseshoe region. Firmer, rational urban growth boundaries, complementary urban and rural land use planning, and a more systems-based approach to designating rural land for development or protection are likely
critical to the ongoing success of agriculture in the near-urban areas of the GGH. Ontario should also consider the benefits of a rural and urban reserves system for managing development in the fastest-growing areas, and the utility of a watchdog group in enforcing and supporting a robust land use planning system. Finally, it is critical to remember that land use planning on its own is not sufficient and that the province should also commit resources to complementary approaches to supporting GGH agriculture, such as outreach and extension services.

Metro Portland’s recent implementation of urban and rural reserves exemplifies a strong agricultural systems approach, demonstrating that this is possible. It also highlights some pitfalls that Ontario should be aware of in taking an agricultural systems approach itself: the process is resource-intensive and requires staff time, funding, and high quality data to succeed. Furthermore, local implementation issues serve as a warning to plan for and mitigate to the extent possible these sorts of problems.

As always when adapting policies from other regions, consideration must be given to how the lessons discussed above would work in the Ontario context. Differences in political systems, policy, demographics, culture, and agriculture could cause tools and approaches to work differently in the GGH. Notably, the GGH’s more urban nature and the fact that the GGH now has several more decades of development patterns to contend with than did Oregon in 1973 will create certain challenges. However, while such consideration must be made, the lessons discussed above still have relevance in Ontario.

This study has also illuminated several areas for future research. A more detailed analysis of the process and outcomes of the implementation of the rural and urban reserves system in Metro Portland would be valuable in helping to identify structural or systemic reasons for both
the successes and the failures of this process. This would be valuable in helping other regions such as Ontario understand how to build resilience into their own political and policy structures as they strive to implement an agricultural systems planning approach. A more thorough review and comparison of Oregon’s and Ontario’s tools for controlling land use on high value agricultural lands (including permitted uses, dwelling permits, and non-farm development permits) could also be valuable for both jurisdictions. Finally, an analysis and comparison of Oregon’s and Ontario’s administrative structures for land use rule making and decision making would be valuable in highlighting institutional strengths and weaknesses in both jurisdictions.
References


City of Toronto. (No date). Toronto Facts: Diversity. Retrieved from https://www1.toronto.ca/wps/portal/contentonly?vgnextoid=4b38e8c379a5d410VgnVCM10000071d60f89RCRD.


United States Census Bureau. (2013). CB1300A11 – Geographic Area Series: County Business Patterns. [Table]. Retrieved from


### Appendix A: List of interviewees

<table>
<thead>
<tr>
<th>Number</th>
<th>General description</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Government employee</td>
<td>Oregon Department of Agriculture</td>
</tr>
<tr>
<td>02</td>
<td>Government employee</td>
<td>Department of Land Conservation and Development</td>
</tr>
<tr>
<td>03</td>
<td>Retired; former government employee and NGO employee</td>
<td>Retired; formerly worked at Metro, DLCD, Columbia Gorge Commission, and 1000 Friends of Oregon</td>
</tr>
<tr>
<td>04</td>
<td>Extension agent</td>
<td>Oregon State University Extension Service: Small Farms</td>
</tr>
<tr>
<td>05</td>
<td>Farmer and consultant</td>
<td>(independent)</td>
</tr>
<tr>
<td>06</td>
<td>Farmers market manager</td>
<td>a Willamette Valley farmers’ market</td>
</tr>
<tr>
<td>07</td>
<td>Researcher and professor</td>
<td>Oregon State University</td>
</tr>
<tr>
<td>08</td>
<td>NGO employee</td>
<td>1000 Friends of Oregon</td>
</tr>
<tr>
<td>09</td>
<td>Extension agent</td>
<td>Oregon State University Extension Service: Small Farms</td>
</tr>
<tr>
<td>10</td>
<td>NGO employee</td>
<td>Rogue Farm Corps</td>
</tr>
<tr>
<td>11</td>
<td>Farmer</td>
<td>(independent)</td>
</tr>
<tr>
<td>12</td>
<td>Researcher and professor</td>
<td>Portland State University</td>
</tr>
<tr>
<td>13</td>
<td>Researcher and professor</td>
<td>Portland State University</td>
</tr>
<tr>
<td>14</td>
<td>Farmer</td>
<td>(independent)</td>
</tr>
<tr>
<td>15</td>
<td>Farmers market manager</td>
<td>a Willamette Valley farmers’ market</td>
</tr>
<tr>
<td>16</td>
<td>NGO employee</td>
<td>1000 Friends of Oregon</td>
</tr>
<tr>
<td>17</td>
<td>Elected member of state house of legislature; formerly employee at Metro</td>
<td>Oregon State Legislature</td>
</tr>
</tbody>
</table>
Appendix B: Interview question guide

INTERVIEW QUESTION GUIDE

FOR THE RESEARCH PROJECT ENTITLED

Farmland Preservation Using Planning for Agricultural Systems

(To begin after confidentiality document has been reviewed, consented to, and signed.)

PART 1: Agriculture

1. What is your experience with agriculture in near-urban areas? E.g. have you worked in agriculture or agricultural businesses, do you work on policy, are you a researcher...?

2. How would you characterize agriculture in this area? What types of products are produced, what sorts of markets do they serve?

3. Do you think there are characteristics of agriculture in this area that are unique?

4. What changes or trends do you notice happening in agriculture in this area? E.g. changes in the number of farms, the size of farms, the products they produce, the markets they sell to...?

5. When thinking about businesses that serve or sell to farmers, do you perceive changes happening over time? I have an example list of such businesses here. Looking for similar characteristics: number of businesses, size of them, types of businesses, ownership, etc.

6. When thinking about businesses that farmers sell their products through or to, do you perceive changes happening over time? I have an example list of such businesses here. I'm curious about similar trends as discussed before: number of businesses, size, type of business, ownership, etc.

7. Overall, how do you think farm families are doing in this area? Are they able to make a decent living, access the services they need, raise a family, etc.?
   - Do you think this answer would be different in other parts of the state less close to urban centres?
Part 2: Policy relationship to agriculture

1. How familiar are you with Oregon policy that affects agriculture in near-urban areas? Is it something that affects you in your work or on a day-to-day basis?

2. Thinking about the trends you told me about that you have been seeing in near-urban agriculture, how do you think that policy or land use planning in Oregon has affected or influenced those trends?

3. Are you aware of any recent changes in this policy (~last 10 years)? If so, have you noticed an effect from it on near-urban agriculture, or do you anticipate any?

4. Overall, how would you rate the effectiveness of policy and planning in supporting agriculture in near-urban areas? (Likert scale, 1-5) What is working well? What changes would you like to see?

Part 3: Wrap-up

5. Is there anything else you would like to tell me about agriculture or the relationship between planning/policy and agriculture in this area?

6. Can you suggest 3-5 other people to whom I should also speak about this research?

Thank you very much for your time.

(Proceed to post-interview confidentiality process)

(The lists on the following pages may be used as aids during the interview to help interview participants think about the different types of farms and farm-related businesses that may be in their area. Each sheet can be handed to the interview participant for them to review as well as discussed out loud, as appropriate through the interview.)
Examples of different types of farms

- Vegetable
- Fruit
- Livestock including meat, dairy, eggs
- Cash/field crops
- Market garden
- Horticulture: flower growers, nurseries for landscaping plants, Christmas tree farms, sod productions, etc.
- Seed producers
- Fibre or energy production
Examples of businesses that serve or sell to farmers:

- Seed suppliers
- Input suppliers (fertilizers, pesticides/herbicides, etc.)
- Equipment suppliers and mechanics
- Small equipment/supply retailers (farm clothes and boots, hand tools, hardware, lumber, etc.)
- Infrastructure suppliers (fencing, livestock management systems, milking equipment, etc.)
- Large animal veterinaries
- Nurseries that start seedlings/saplings for farmers
Examples of businesses that farmers sell to or through:

- Abattoirs
- Grain mills/silos
- Produce auctions
- Processors such as canneries, cider/wine/beer producers, milk and other dairy processing, ketchup or pickle plants...
- Distribution companies
- Food hubs
- Farmers markets, Community Shared Agriculture schemes (CSA), and other direct-to-consumer marketing avenues
Appendix C: Oregon’s 19 Statewide Planning Goals

Between 1973 and 1976, LCDC developed 19 statewide planning goals, which remain in force today and are listed below. DLCD publishes a document providing further detail on each goal, which can be found online:

http://www.oregon.gov/LCD/docs/goals/compilation_of_statewide_planning_goals.pdf. Goal 3, Agricultural Lands, is the most relevant for this study.

Oregon’s Statewide Planning Goals

1. Citizen Involvement
2. Land Use Planning
3. Agricultural Lands
4. Forest Lands
5. Natural Resources, Scenic and Historic Areas, and Open Spaces
6. Air, Water and Land Resources Quality
7. Areas Subject to Natural Hazards
8. Recreational Needs
9. Economic Development
10. Housing
11. Public Facilities and Services
12. Transportation
13. Energy Conservation
14. Urbanization
15. Willamette River Greenway
16. Estuarine Resources
17. Coastal Shorelands
18. Beaches and Dunes
19. Ocean Resources