

---

# Capital Region Board Growth Plan Update

---

Agriculture Working Paper

---

Jerry Bouma, B.Sc., M. Sc.,

---

January 10, 2016

---

## DISCLAIMER

The analysis and recommendations presented in this Working Paper are expressed by the author and have not been endorsed by the Capital Region Board. Rather, its purpose is to provide background and information on key issues facing the Capital Region. The information contained in this document is being used as part of the input and decision process to inform policy directions the CRB may choose to consider as part of updating the regional growth management plan.

This document has been prepared in good faith on the basis of information available at the date of publication without any independent verification. Capital Region Board (CRB) does not guarantee or warrant the accuracy, reliability, completeness or currency of the information in this publication nor its usefulness in achieving any purpose. Readers are responsible for assessing the relevance and accuracy of the content of this publication. CRB will not be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on information in this publication.

# 1. Introduction

## Overview and Scope of Paper

### Introduction

The CRB addressed the preservation of agricultural land issue in 2009. The decision at that time was made to defer to the Province of Alberta who was in the process of developing the Provincial Land Use Framework. However this process failed to provide specific guidelines regarding agricultural lands. Consequently, the onus for agricultural land use polices remains with the municipalities<sup>1</sup>.

A key challenge for the Capital Region Growth Plan is to “clarify the role of agriculture in the Region and in particular to define what and where the disposition and protection of agricultural lands is appropriate.<sup>2</sup> Subsequently the Growth Plan Update (March 20, 2015) presented the following draft principle specific to this challenge: *Wisely manage prime agricultural resources*. The principle is qualified with the following narrative: *“In the context of metropolitan growth, we will ensure the wise management of agricultural resources to continue a thriving agricultural sector.”*<sup>3</sup>

We would interpret the wise management of the prime agricultural resources includes people, community and most importantly land. Land is both foundational and essential to agriculture.

### Overview of the Paper, Scope and Purpose

This Working Paper provides background, context and recommendations for a menu of policies that can be applied within a rapidly growing metropolitan region. As the discussions within the Growth Plan Update Task Force have evolved<sup>4</sup>, a series of core questions and priority issues that the Growth Plan needs to address have emerged. These are listed below and serve as a guideline for this working paper:

#### Core Questions

1. Why preserve agricultural land in the first place?
2. What criteria or guidelines can be used to determine what agricultural lands should be preserved? In other words, what defines ‘prime’ agricultural land?
3. What can be learned from other municipalities who have dealt with these issues?
4. What are the policies and tools that can be applied to preserve agricultural land?

#### Priority Issues to be addressed in the Growth Plan Update

1. Sustain prime agricultural lands at the regional level.
2. Promote growth of the region’s agricultural sector, including food production and processing, as a key regional economic driver.
3. Plan and coordinate infrastructure to support and enhance the agricultural sector.
4. Manage near neighbor impacts on agriculture operations.
5. Address pressures for non-agricultural development in rural areas on prime agricultural lands (e.g., new agricultural acreage, multi-lot country cluster residential, rural residential, all types of industrial) and fragmentation of agricultural lands.
6. Define mechanisms, in partnership with the Province of Alberta, to wisely manage agricultural lands.

---

<sup>1</sup> The one change is a change in language which has moved from the term “encouraged to “expect” to limit fragmentation and the premature conversion of agricultural lands. However, there is no requirement per se. The hierarchical nature of Alberta’s system requires the Regional Planning directions, as they are finally adopted, to be considered in the preparation of plans by both the Capital Region Board and individual municipalities.

<sup>2</sup> Growth Plan Review: Findings and Recommendations Report; Urban Strategies/ISL Engineering and Land Services, September 4, 2014

<sup>3</sup> Growth Plan Update: CAO Meeting, Urban Strategies/ISL Engineering and Land Services, March 2015.

<sup>4</sup> Input and direction received from the CRB on August 17<sup>th</sup> 2015

## Definition of the Agriculture Issue

Overall farms in the Capital Region generate an estimated \$820 million<sup>5</sup> in direct farm sales each year. The multiplier effect increases this amount another two-fold<sup>6</sup>. At the same time, urban growth is consuming and/or fragmenting large areas of agricultural land as well as impacting the remaining farms and farming communities<sup>7</sup>. In view of the Growth Plan 2.0 update and the “wise management of prime agricultural resources” principle, the key question that arises is this: what policies and tools can be applied to sustain the agriculture sector which is both an industry and a community, but at the same time accommodate growth in the Capital Region?

## 2. Context

### Introduction

Historically, land has been viewed as an abundant resource in North America and particularly Western Canada. As communities grew, land on the periphery including agricultural land, was regarded simply as a reserve for urban development. Thus as communities began to press on existing urban boundaries, neighbouring lands would be simply annexed to accommodate expansion.

Significantly, the lands most suited for efficient and cost effective development would also be the best agricultural lands – namely lands that are cleared, level, well drained and easily accessed, very much the case for much of the agricultural land in the Capital Region. Arguably the act of ‘preserving’ agricultural land runs counter to the prevailing ethos underlying the development of Western Canadian urban regions for the past 150 years.

### Analysis of Issue

A complex array of conflicting positions underlies the agricultural land preservation issue. These include: (1) **the agrarians** steeped in an historical ideology that values rural society as superior to urban society, and farming as a way of shaping ideal social values<sup>8</sup>; (2) **the economic pragmatists** who take a “value neutral” position and argue simply that the ‘market’ should be the final (and only) arbitrator of use; and (3) **the environmentalists** who argue that lands must be protected for reasons of maintaining natural heritage, natural capital and to provide capacity to respond to future demands including food security. These opposing views are strongly held making it very difficult for political leaders to deal with the land preservation challenge.

Interestingly, agrarianism has also generated the complete opposite view to the agricultural land preservationist position – namely a deeply held value that land owners have the right to do what they think best on their owned land, free of interference or even zoning requirements. Farmers themselves are often leading advocates of this position – particularly farmers who own land in areas nearby or adjacent to urban developments. This strongly held position within the farming community makes it very difficult for politicians to formulate firm land use preservation policies. It also explains why the provincial government has not taken a leadership position on this issue to date.

The economic pragmatists present three arguments: (1) there is no farmland crisis – an issue that is exaggerated and based on emotional or anecdotal points of view; (2) technology is a substitute for land – namely, the steady increases in productivity experienced to date will continue into the future and offset any production that might

---

<sup>5</sup> According to the 2011 Census, Capital Region farms generated over \$650 million in sales, annually. By 2014 this has increased by 25% due to rising meat and grain prices. Source: Agri-Food Statistics Update, Issue No: F115-1, Alberta Government.

<sup>6</sup> The Alberta Government economic multiplier for direct and indirect effects from “crop and animal production” is 2.12.

<sup>7</sup> Impacts of fragmentation and neighbour influences on farmland conversion: A case study of the Edmonton-Calgary Corridor, Alberta Land Institute, 2015. The study noted that while Edmonton and Calgary both experienced similar rates of population growth from 2000 to 2012, farmland conversion in the Edmonton census metropolitan area was almost 3 times higher.

<sup>8</sup> Losing Ground: Farmland Preservation, economic utilitarianism and the erosion of the agrarian ideal, Matthew Mariola, University of Wisconsin, 2003.

be lost from agricultural land that is converted for urban uses; and (3) agriculture should be measured in economic terms only – thus if there is a higher or better use for the land, it should be allowed to realize this potential.

The environmentalists argue that agricultural lands should be preserved to protect natural heritage and for reasons of food security. This is an increasingly prominent view held by society at large. To illustrate the degree of public concern, a 2014 survey<sup>9</sup> conducted with residents in British Columbia illustrates that 95% of residents say that the existing Agricultural Land Reserve (ALR) should be preserved for green space and growing food; 80% are concerned about the dependence on other countries for our food; 76% either agree or strongly agree that the ALR is important, not only for protecting farms, but also for protecting valleys and green space needed for wildlife habitat and recreational enjoyment.

Any discussion on agricultural land preservation quickly begs the question: **what lands are to be protected and why?** The answer lies firstly in understanding the impacts of urbanization on agriculture. This is also known as the urban shadow and commonly referred to as urban sprawl. The urban shadow can be defined as the land area that experiences the effects (direct and indirect) of urbanization on adjoining or nearby lands which are typically rural - effects that would not otherwise exist without the presence of a large and growing urban centre. It also goes well beyond the actual area that is being developed.

The negative effects include: the actual loss of agricultural land; fragmentation and the loss of contiguous farming areas; smaller land parcels and/or odd-shaped parcels – both are less suited for large farm equipment; increased traffic and safety concerns particularly when moving equipment; increased nuisance factors, conflicts with non-farm neighbours; trespassing and vandalism; increased land prices and competition for land; as well as water and air pollution. All these factors make it both more difficult and more costly to farm. However, there are also some positive effects including: proximity to urban markets inducing the establishment of specialty operations (vegetable and fruit enterprises; agritourism destinations); access to labour and professional services; ability to spread risk through off-farm employment; and the ability for some farmers/land owners to sell land at high prices and purchase much larger farm parcels in more distant rural areas.

Specific to the question of what lands are to be protected, the most common technical base to determine the productivity potential of agricultural land is the Canada Land Inventory (C.L.I.). The C.L.I. soil capability for agriculture is based on an actual assessment of mineral soils and groups land into seven classes. Classes 1, 2, 3 and 4 are considered capable of sustained use for cultivated field crops; classes 5 and 6 are suited for perennial forage crops. Lands in Class 7 are considered not suitable for either<sup>10</sup>.

The CLI provides useful technical information regarding the soil (and crop) capability for a particular piece of property or area. Clearly Class 1 land is superior in terms of productivity to Class 2 which is in turn superior to Class 3 and so on. For example, counties in the Capital Region use the C.L.I. ratings as the basis for the Farmland Assessment Rating (FAR) system that was initially established in 1967 by the Province of Alberta to ascertain land values for the purposes of tax assessment.

The FAR system is a measure of the present physical state of the property. FAR does not take into account any development, proximity or contiguous factors. There is a high correlation between C.L.I. Soil Class and Farmland Assessment Rating (FAR). The following rating scheme is used:

Class	FAR Rating	Description
Class 1:	78-100	(very good to excellent arable)
Class 2:	58-77	(good to very good arable)
Class 3:	41-57	(fairly good to good arable)
Class 4:	28-40	(fairly good to good arable)

<sup>9</sup> BC Public Opinion Study Shows Strong Support for Local Farmland - Conducted by the Real Estate Foundation in August 2014 with a sample of 1704 residents. We are not aware that a survey of this nature has been conducted in Alberta.

<sup>10</sup> In addition to these broad classes, each class is divided into sub-classes based on limitations. These include: adverse climate; erosion damage; flooding by streams or lakes; stoniness; shallowness to bedrock; adverse topography; and excess water.

Class 5:	16-27	(poor to fair arable)
Class 6:	9-15	(good to very good pasture)
Class 7:	4-8	(fair to good pasture)
Class 8:	0-4	(poor to fair pasture)

The FAR rating alone however is not sufficient to determine the suitability of agricultural land for re-zoning since it provides no information specific to the contiguous nature or the intensity of the agricultural activities taking place in the immediate vicinity. Nor does it address such relevant factors as the character of the community, the suitability for development relative to local development pressures and the availability and or cost of required services. In addition the specific methodologies being used to calculate the actual FAR rating for each property may vary from County to County. For example, Leduc County updates FAR ratings for every property every five years, while Parkland County reviews the FAR rating only when an application for subdivision is submitted. Depending on how current the existing FAR rating may be as well as how these ratings may vary across municipalities raise questions about the use of FAR as an improvement over the C.L.I. Soil Class ratings without further review.

A more robust approach to assessing agricultural land in response to development pressures has been developed by the United States Department of Agriculture (USDA). The process is known as **the Land Evaluation and Site Assessment (LESA) rating system**. Originally developed in the 1970's to determine agricultural land value for property tax purposes, it was adapted in 1981 to serve as an evaluation tool for land use decisions. LESA now functions as a tool to assist local officials in identifying farmland for protection by taking into account not only soil quality but other factors that affect agricultural practices and subsequently rating farmland sites on a relative basis for decision making.<sup>11</sup> It is our understanding that LESA is being used extensively across the USA.

LESA is a system for combining soil quality factors with other economic and location factors that affect the suitability of the site for continued agricultural use. It is comprised of four components:

- LE (Land Evaluation): soil-based factors (such as C.L.I. ratings).
- SA-1 (Site Assessment): other agricultural factors such as size of parcel; current level of farm sales; net income generated; soil and water conservation practices.
- SA-2 (Site Assessment): factors measuring development pressure such as proximity of residential, commercial and industry zoning; proximity of agricultural or rural zoning.
- SA-3 (Site Assessment): factors measuring other public values such as historic or scenic values; and environmental considerations.

The system is both flexible and adaptable. Each municipality can make a determination of its own site assessment factors; the relative weighting of the four factors; and composition and relative weights of the sub-factors. For example, Lancaster County, Pennsylvania defines the SA-3 factor as Clustering Potential – factors which measure how well a farm property fits within the agricultural region. Overall, Lancaster assigns the following weights based on a total scale of 100 points: Soils – 40 points; Other Agricultural Factors – 20 points; Development Potential – 20 points; and Clustering Potential – 20 points<sup>12</sup>.

### Application to the Capital Region

The Capital Region Growth Plan 2.0 update proposes that the Capital Region itself be segmented into three policy tiers: a) the Metropolitan Core – the contiguous developed area within the City of Edmonton with the highest density development served by higher order transit and highest concentration of regionally significant amenities and services; b) the Metropolitan Area – those areas with a densely populated urban core, satellite cities/towns and intervening undeveloped areas that are socio-economically tied and which share industry, housing and infrastructure, and are adjacent to major transportation corridors; and c) the Rural Area – those

<sup>11</sup> Land Evaluation and Site Assessment: A Guidebook for Rating Agricultural Lands, Second Edition. Soil and Water Conservation Society, circa 1995.

<sup>12</sup> Lancaster County Agricultural Preserve Board Farmland Ranking System. Available at <http://www.smartcommunities.ncat.org/codes/lancastr3.shtml>  
DRAFT 10/01/2016

areas consisting of rural working landscapes with agricultural lands, environmental areas, resource extraction areas supported by small scale rural centres, towns, villages and unincorporated communities.

This approach is consistent with the essential framework outlined by the LESA program. For example, if we were to assess the land preservation 'case' for three properties with the identical physical characteristics (assume Class 1): one property is located in the Metropolitan Core; one is located in the Metropolitan Area; and one is located in the Rural Area, the three scores would be completely different. The Rural Area property would have a much higher 'land preservation' score in comparison to the Metropolitan Area property and the Metropolitan Core property. Accordingly, different policy instruments would be applied in each area depending on what is to be achieved – this is discussed further in Section 4 – Potential Policy Options and Alternatives.

In summary, there are four major reasons to preserve agricultural land particularly Classes 1, 2 and 3<sup>13</sup>:

1. Maintain the local agricultural economy which within the Capital Region exceeds \$2.5<sup>14</sup> billion per year specific to production agriculture. This does not include the food and agricultural processing sector located within the Capital Region which is another \$4 billion (estimated).<sup>15</sup> Thus the combined economic activity attributable to both production and processes exceeds \$6.5 billion annually.
2. Ensure the long term supply of food and fiber - two key factors should be considered: a) the Region's role in the bigger picture as a supplier to meet national and international requirements<sup>16</sup>; and b) the opportunities to foster the development of the local food economy in the response to the growing and arguably strong interest in local food.
3. Limit the urban footprint and commit to 'smart' growth – the more intensified urban development, the less pressure on agricultural lands.
4. Provide open space and associated amenities primarily for the benefit of society at large. Recent analysis conducted in the Ontario Greenbelt reported these benefits to be significant and should be considered on the basis of both economic and social merits.<sup>17</sup>

But there is one more compelling and overriding reason: if the Capital Region Growth Plan 2.0 is able to achieve its urban growth objectives and at the same time, maintain its agricultural base (or at the very least minimize the negative impact to this base), would that not be the more desirable outcome?

## Policy Analysis and Context

The primary purpose of the Capital Region Growth Plan 2.0 is to manage sustainable growth in a manner that protects the region's environment and resources, minimizes the regional development footprint, strengthens communities, increases transportation choice and supports food and agricultural sector development. No specific policies were formulated in 2009 as the CRB chose to wait for direction from the Province.

The Province articulated its position in August, 2014, when it wrote to the Capital Region Board stating that "they determined that the economic, environmental and social evidence did not currently support the need for a provincial-level policy on agricultural fragmentation and conversion, though we recognize the issue as a growing concern throughout Alberta, particularly within the Edmonton-Calgary corridor."

---

<sup>13</sup> Most cropping activities take place on Class 1, 2 and 3 lands. While Classes 2 and 3 are not as productive as Class 1, they are nevertheless important production areas within the prime agricultural land base.

<sup>14</sup> In 2014, the total farm production is estimated at \$820 million. When this is multiplied by the Alberta Government multiplier of 2.12, this becomes \$1.74 billion of economic activity (input suppliers, labour, services, etc.). Thus the combined economic impact is \$820 million plus \$1.74 billion or \$2.5 billion.

<sup>15</sup> The total value of food and beverage processing in Alberta is reported to be \$13.7 billion in 2014. An estimated one-third of total processing is located in the Capital Region.

<sup>16</sup> The CIA forecasts that only six countries will be net exporters of food and agricultural product exporters. One of these will be Canada and it is likely that the major share of this output will be sourced from western Canada and led by Alberta. It follows that as global demand grows and food producing areas decline due to urbanization as well as increasingly uncertain weather patterns, Alberta will play an essential role as a food provider to meet this demand.

<sup>17</sup> Nature on the Edge: Natural Capital and Ontario's Growing Golden Horseshoe, David Suzuki Foundation, February 2013

Specific to agriculture, the CRB 2010 Plan does little else other than to identify those areas that have been designated for agricultural purposes by municipalities.

Within the Capital Region, there are differing approaches to agricultural land use planning. For example:

- Parkland County has a subdivision policy as per the 2007 Municipal Development Plan that allows four parcels out for each quarter section ranging from four 40 acre parcels or up to three 2-acre parcels and the remnant large parcel. It also has large areas that are zoned Country Residential.
- Strathcona County has an Agriculture 'Large Holdings' Policy Area in areas of better soils (Classes 1 & 2) on which subdivision is limited to one parcel out or a split into two equal parts. Strathcona County also has an Agriculture "Small Holdings" Policy area in areas of poorer soils and environmentally sensitive areas. It also has an Agri-Industrial Transition Policy Area as a transition zone between the Heartland industrial development and the agricultural lands to the south.
- Leduc County allows one lot per un-subdivided quarter section on high capability agricultural land. The lots must either be large enough to farm (80 acres) or a lot approximately 2.5 acres in size. Small holdings are allowed in areas with low capability agricultural land.
- The City of Edmonton recently approved the re-zoning of a large tract of agricultural land in the northeast part of the City for urban development. This area is currently in the planning stages and is being designed to reflect its agricultural heritage. Some agricultural land remains.

To conclude, the Capital Region faces the following policy gaps specific to the preservation of agricultural land:

1. A lack of leadership and direction from the Province.
2. No differentiation with respect to which agricultural lands are more suitable for preservation or development. Currently all agricultural lands are treated as equal.
3. The lack of a robust analytical framework to assist in the assessment and prioritization of specific agricultural areas (or properties) relative to the development pressures.
4. Differing approaches being taken by municipalities within the Capital Region which in turn leads to differing rates of land conversion (agriculture to other uses), fragmentation and impacts to the agricultural industry at large.

### 3. Best Practices

#### Introduction

Policies and programs specific to agricultural land preservation have been at play within densely populated areas within Canada and the USA for the past 50 years. These range from the full on 'land freeze' approach to a range of policies that promote or support agriculture including the market trading of development credits:

- **British Columbia Agriculture Land Reserve:** enacted by provincial legislation in response to growing concerns that the small area of agricultural land mostly based in the lower mainland (Fraser Valley) was at risk. The process began in 1972. By 1976 the policy was fully implemented with a total of 4.7 million hectares in the Reserve across the entire Province. Despite several boundary changes and moving lands both in and out, it remains approximately the same size (5% of the province). Farmers are allowed to operate businesses with a minimal amount of interference as compensation for the land freeze allowing on-farm businesses, roadside stands and bed and breakfast operations.
- **Ontario Greenbelt:** enacted by provincial legislation in 2005 and similar to the BC approach. The Greenbelt encompasses a large horseshoe shaped area approximately 720,000 hectares in size, that begins northeast of Toronto and swings around Lake Ontario to include the Niagara Peninsula including the tender fruit and wine growing regions located below the Niagara Escarpment. The plan identifies where urbanization should not occur by providing permanent protection to the agricultural land base and the ecological features occurring on this landscape which includes the Niagara Escarpment and the Oak Ridges Moraine.

- **Lancaster County, Pennsylvania:** located approximately 50 miles west of Philadelphia, Lancaster County is considered a leader in land preservation and the support of agriculture. It is the heart of Amish country with a very strong cultural and historical heritage for which there is strong public support to preserve and protect agricultural land. Significantly, it has a population of over 530,000; only one major city – Lancaster with 55,000; and a farm acreage base of 400,000 acres. Lancaster County has adopted a multi-dimensional approach which includes growth boundaries, agricultural zoning and the purchase and transfer of development rights. The County has established clear goals which are executed through local comprehensive plans, a county led Agriculture Preserve Board (APB) and non-profit land trust known as the Lancaster Farmland Trust (LFT).
- **Montgomery County, Maryland:** located just north of Washington D.C., the County began efforts in 1964 to focus development along existing transportation corridors and allow the remaining rural areas to stay in agricultural production. In 1980, the County brought forward a new Master Plan that created a 93,000 acre Agriculture Reserve with a transferable development rights (TDR) program, the first county to do so. This plan reduced the density to one unit per 25 acres (formerly one unit per 5 acres). The reserve became the sending area while receiving areas were located along transportation corridors where roads and schools were already located. The success of this program can be compared to neighbouring Fredrick County, Maryland where scattered sprawling development has overtaken the countryside.
- **Whatcom County, Washington:** recognized the unintended consequences of prioritizing multiple comprehensive planning goals when they compete with one another when it comes to on-the-ground implementation. The County's stated goal is to keep an agricultural base of at least 100,000 acres as the minimum requirement to sustain agriculture's supporting infrastructure of supplies, equipment, services, and expertise. The County also recognized it is necessary to maintain large contiguous areas to efficiently produce and process commercial agricultural products. It has programs for both transfer and purchase of development rights. In addition, the County is reviewing all land designations – both lands within Agriculture Zones that should no longer be designated as such and lands in Rural Zones to determine if they should be designated agriculture.
- **State of California:** established the first agricultural land trust in the US – the Marin Agricultural Land Trust in 1980. By 2002, there were 34 easement programs (trusts) with a farmland focus. Despite tax incentives to donors, land trusts with additional public funding that enables them to purchase easements from farmers have been most successful. Many land trusts receive public funding especially from county level agencies. The most successful local land trusts now represent the principal vehicle for organizing local conservation. Significantly, another study conducted by the American Farmland Trust on land use in California<sup>18</sup> identified “ranchettes” (non-farm residences on very large rural lots) to be a troublesome trend actually reducing population density in some areas. According to this study, the problems caused by this form of development are several fold: inefficient conversion of land and impacts on agricultural production both in terms of driving up the price of land as well as curtailing or modifying routine agricultural practices.

---

<sup>18</sup> Paving Paradise: A New Perspective on California Farmland Conversion, 2007.  
DRAFT 10/01/2016

## 4. Potential Policy Options and Alternatives

### Introduction

The case studies listed in the previous section provided instruction regarding the menu of policies that can be adopted to preserve agricultural land and hence maintain the agricultural economy:

1. **Freeze lands for agriculture – establish permanent boundaries around agricultural areas**, such as the BC Agriculture Land Reserve (some would call it a land ‘freeze’). This approach is typically only implemented by provincial or state authorities. Alberta, when it designated RDAs in the early 1970s, did a similar thing for transportation corridors. The same objectives are accomplished in Alberta by municipalities (or a CRB policy) through strict adherence to a zoning scheme, but this is subject to obvious direct political pressures at the municipal level.
2. **Establish a long-term growth area boundary** - several US states, such as Tennessee and Oregon, require that urban growth boundaries be defined in the context of overall ‘smart growth’. One area has purchased lands in order to create an old style ‘greenbelt.’ In Pennsylvania, the Preserve Board pursues a policy that is unique in the United States: a strategic effort to purchase development rights on farms close to development to maintain urban growth boundaries and ‘village growth boundaries’ which will restrict sprawl onto productive farmland. These types of policies typically require strong community support.
3. **Major Project Review/Agriculture Impact Assessment** - several jurisdictions require that projects, particularly at the state or provincial level, must take the loss of farmland and farming activity into account. BC, in fact, requires all provincial departments and projects to comply with the requirements of the Agriculture Land Reserve. In Pennsylvania, the state department of agriculture reviews the projects of all state agencies that might involve the conversion of farmland to other uses. In other states, executive orders direct state agencies to withhold funding from projects that would result in farmland conversion. Prior to the Greenbelt Act in Ontario (2005), Halton and Peel Counties required an **Agricultural Impact Assessment** – a detailed assessment of the environmental as well as the local economic and community impact of a proposed re-zoning from agricultural lands.
4. **Acquisition of agricultural conservation easements (buying development rights)** - programs have been developed in the US for state and local governments to purchase agricultural conservation easements. It is usually based on the difference between the value as agricultural land and for development. Funds may come from bonds, various taxes, check off contributions, credit card affinity plans, and from federal programs, etc. Donations can be made to qualified public or non-profit organizations to accept interest in property that is less than fee simple for the purposes of land preservation. Grantors usually retain other property rights (use for agriculture, access control) except for development. This is common in the US. Often tax benefits are given to the grantor. **Conservation easements** are used in the Capital Region (Strathcona) for protecting environmentally sensitive lands as a trade-off for subdivision approval. It could also be used for agriculture lands.
5. **Mitigation & compensation procedures** - King County, Washington requires **the re-conversion of land back to agricultural land when allowing the development of other land (‘no net loss’**- this is common in dealing with fish habitat). This is also used by the BC Land Reserve Commission to justify adjusting agricultural reserve boundaries - land can be pro-rated as to quality in moving it in or out of the Agricultural Land Reserve. Similarly, subdivision may be allowed if it is offset by consolidation of fragmented land elsewhere.
6. **Transfer of Development Credits (TDC)** - this technique has been used frequently for the preservation of agricultural land. If the land owner chooses not to develop on the site in question (i.e., permanently preserve agricultural land), that owner can trade that density to another site. This assumes that there are receiving areas set up. These systems are usually complex to determine fairly and administer reasonably given the complexities of a metropolitan land market. Some US jurisdictions have ‘publicly funded’ TDC banks that trade in development credits.

7. **Cluster development** – The City of Surrey uses **cluster zoning** to protect trees - it was instituted by downzoning and bonusing back. This form of development is usually suggested for environmental reasons (such as allowing more effective rural sewage systems) but it could also be used for preserving agricultural lands or creating buffers if agriculture can be maintained.
  
8. **Zoning for agriculture** - many commentators call for **zoning land for agriculture in the context of a long-term plan, while limiting or restricting competing or conflicting uses.** The major difficulty with zoning as a tool for land preservation is that it is enacted at the municipal level, where it can be changed in response to local pressures, especially those favouring economic development and higher tax revenues.
  
9. **Limit or stop fragmentation & parcelization** - there are two major concerns with parcelization (or fragmentation) of the agricultural land base through the zoning and subdivision processes. The first is that land may be cut up so that any one parcel no longer provides the area necessary for a viable operation. Historically, in many areas of Alberta, this was viewed as either a quarter section (in some cases this is 80 acres). The reality is that extensive agricultural operations are either larger (several thousand acres) or are smaller more intensive operations. The second concern is the increase in the non-agricultural population in the rural areas as more residential parcels are created which lead to additional conflicts and nuisance complaints.

**Application to the Capital Region**

A general outline of proposed policy directions by Policy Tier is presented as follows:

Policy Tier	Type of Agriculture	Policy Directions
Rural Area	<p>Broad range of livestock and crop agriculture.</p> <p>Large operations mixed with life style farms and acreages.</p>	<ul style="list-style-type: none"> <li>• <b>Major Project Review/Agriculture Impact Assessment</b> - applications to rezone agricultural land required to address both economic and community impacts.</li> <li>• <b>Cluster development</b> - country residential only in fragmented areas or lower class soils (Class 4 or higher).</li> <li>• <b>Limit or stop fragmentation</b> - designate large holdings policy areas and limiting sub-divisions. Define minimum parcel and large parcel sizes.</li> <li>• <b>General</b> – all farming to abide by provincial standards: minimum distance for livestock; Good Agricultural Practices (GAP).</li> </ul>
Metropolitan Area	<p>Large field crops Specialized operations – equine operations, market gardens; apiaries; greenhouses; nurseries.</p> <p>Small livestock operations (sheep; goats; poultry; llama etc.).</p> <p>Food and agricultural processing/commercial.</p>	<ul style="list-style-type: none"> <li>• <b>Major Project Review/Agriculture Impact Assessment</b> - applications to rezone agricultural land required to address both economic and community impacts.</li> <li>• <b>Conservation easement</b> (buying development rights) - allow for special agricultural areas with unique value to be preserved.</li> <li>• <b>Establish Development Transfer Credit</b> – a system that directs development to distinct receiving areas from defined sending areas.</li> <li>• <b>Zoning for agriculture</b> - to include:                         <ul style="list-style-type: none"> <li>➤ Small holdings policy area</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>- for agri-acreages;             <ul style="list-style-type: none"> <li>➤ Rural-urban transition areas which allow for buffers, transition zones;</li> <li>➤ Agri-industrial transition policy area to allow for agri-commercial opportunities.</li> </ul> </li> <li>• <b>Cluster development</b> – direct country residential, acreages to lower quality lands or in concentrated areas.</li> <li>• <b>Support with economic development policies</b> specific local food, market development, agri-tourism and events.</li> </ul>
<p><b>Metropolitan Core</b></p>	<p>Urban agriculture.</p> <p>Specialized operations – equine operations, market gardens; greenhouses; nurseries.</p> <p>Small livestock operations (poultry; bees).</p>	<ul style="list-style-type: none"> <li>• <b>Urban agricultural policy</b> - ensure that bylaws allow for appropriate specific and limited livestock to be raised subject to public nuisance and safety requirements; allow for community gardens on municipal reserve lands.</li> <li>• <b>Conservation easement</b> (buying development rights) - allow for special agricultural areas with unique value to be preserved.</li> <li>• <b>Support with economic development policies</b> specific to local food, market development and infrastructure programs.</li> </ul>

## 5. Directions and Recommendations

### Introduction

Maintaining and growing a thriving agricultural sector in the Capital Region will require a multi-dimensional approach which requires the implementation of several policies. These include (but are not limited to) the establishment of clear growth boundaries, long term agricultural zoning, an analytical framework to assess development potential and priorities and the transfer of development credits. Most importantly however, it will require a strong overriding political commitment to preserve agricultural land. In the absence of such commitment, agriculture will not thrive in the Capital Region and instead will diminish and be subject to further development, the urban shadow effect and an uncertain future.

### Recommendations for the Capital Region Growth Plan 2.0

1. First and foremost, the Capital Region must recognize that prime agricultural land has unique value and must receive special consideration. To this end, we recommend that the CRB **adopt the following principle:**

**The conversion or fragmentation of prime agricultural lands to non-agricultural uses for the purposes of urban growth will only be done as a last resort.**

We would also add that if the above principle is not agreed to, the overriding objective of having a thriving agricultural sector will not be achieved. It should also be restated that the current rate of agricultural conversion in the Capital Region is almost 3 times that of the Calgary region.<sup>19</sup>

2. **Establish the Capital Region Land Evaluation and Site Assessment framework.** Further to the analytical framework already established in the USA, we recommend that the CRB develop its own LESA program. This will provide the CRB with a tool to objectively assess and evaluate all agricultural lands in the Capital Region and effectively create 'level analytical playing fields' by policy tier namely, Metropolitan Core, Metropolitan Area and Rural Area.

By way of background, we are not aware of any "LESA-light" or "LESA-like" criteria<sup>20</sup> available for use in the absence of completing the LESA to identify priority prime agricultural lands. Developing a proxy for LESA is outside the scope of this working paper. A full detailed LESA process for the Capital Region would take 12 to 18 months to complete subsequent to the formulation of clear terms of reference. The biggest challenge will be the establishment of the factors to be included and the relative weighting of these factors which will require an iterative consultation process. **Until the Capital Region LESA is completed, the use of C.L.I. Soil Classes 1, 2 and 3 is recommended as the basis for identifying prime agricultural lands for preservation.**

---

<sup>19</sup> The 2015 Alberta Institute Study (cited in Footnote 7) concludes that a clear pattern of increased area in the Edmonton region has been converted from agriculture. Interestingly, average patch size across the larger corridor is increasing – a reflection of fewer larger farms. However, the opposite is occurring in the Edmonton area, the Red Deer area and parts of the Calgary area. The study specifically identifies three areas in the Edmonton region where the greatest rate of fragmentation is taking place – north east Sturgeon County; east Parkland County; and the centre of Leduc County.

<sup>20</sup> Ontario implemented a system called Land Evaluation & Area Review (LEAR) in 2002. It combines several factors including soils, social, economic and environmental elements but the system is used for comprehensive planning reviews at the 'area' level, not to evaluate specific applications or properties. In addition another system called the Agroclimatic Resource Index (ACRI) provides a more comprehensive assessment of physiographic factors that includes soil qualities, season length, temperature and moisture but does not address location, economic or infrastructure factors.

3. **Evaluate and assess the agricultural lands currently under development pressure.** This can only be done subsequent to the acceptance and implementation of Recommendation 2. Once completed however, the evaluation and assessment process will provide the basis from which priority areas for preservation (including potential Agriculture Land Reserves) as well as areas best suited for urban development can be established for each policy tier.
4. **Identify and Preserve Special Agricultural Areas** – a ‘Special Agricultural Area’ is defined as an area characterized by unique soils, climatic factors, infrastructure and/or management capabilities that enables it to produce a range of agricultural/food products that cannot be replicated elsewhere<sup>21</sup>. To this end, we recommend that the Capital Region identify and preserve such unique areas. For example, we are aware of areas located along the North Saskatchewan River as well as areas of unique and deep black soils located in Leduc and Strathcona Counties. In addition, Parkland and Sturgeon Counties have areas of unique sandy loams that are particularly well suited for seed and specialty potato production.
5. **Conduct a detailed assessment of the Transfer of Development Credit (TDC) program** that could be designed and applied to the Capital Region. The experience in the USA illustrates that an effective TDC program can serve to address multiple issues including the reduction of land fragmentation, concentrating development and enabling land owners to realize capital value without having to develop a particular property. Once this assessment is made including the identification of ‘sending’ areas as well as ‘receiving’ areas, the CRB can consider the adoption of such a program.
6. **Undertake a Capital Region Agriculture Master Plan.** Currently each County has its own Municipal Development Plan (MDP) that addresses agricultural land. While there are many similarities, there are also some significant differences. Some MDPs are more amenable to the development of agricultural lands than others. A Regional Agricultural Master Plan would serve to minimize or eliminate these differences.
7. **Take the necessary steps to fully engage the Government of Alberta** in the agricultural land use planning process. While the Capital Region can play a leadership role with respect to the preservation of agricultural lands and the development of a tiered policy framework, the effectiveness of these undertakings will be enhanced with the support of the Province. This will require a continuous process of communications and advocacy.

---

<sup>21</sup> Three examples include: a) the Holland Marsh in Ontario – an area of deep black/peat soils that grow large acreages of vegetables; b) the Niagara Peninsula between the Niagara Escarpment and Lake Ontario – known as the tender fruit growing region including peaches and grapes; and c) the Okanagan Region – B.C.’s wine growing region.