

City of Chilliwack Small Lot Agriculture Study



FINAL REVISED DRAFT

August 18, 2017

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Table of Contents

Table of Contents	i
List of Tables	iii
List of Figures	iv
Executive Summary.....	1
Section 1: Introduction	2
1.1 A Definition of Small Lot Agriculture	3
1.2 Biophysical Suitability for Farming in Chilliwack	3
Section 2: City of Chilliwack Policies and Regulations	4
2.1 Official Community Plan.....	4
2.2 Zoning Bylaw	4
2.3 Processes that Create Small Lots	5
Section 3: Literature Review	7
3.1 Studies on the Agricultural Suitability and Small Lots.....	7
3.2 Studies on the Impact of Zoning on Agricultural Lot Size	7
3.3 Studies on the Challenges Associated with Farming Small Lots	8
3.4 Studies on the Long-Term Viability of Small Lot Farms	9
Section 4: The Status of Agriculture on Small ALR Lots	11
4.1 Distribution of Lot Sizes in the ALR	11
4.2 Land Use and Lot Size.....	13
4.3 Status of Agriculture and Parcel Size – Chilliwack vs. Other Municipalities	15
4.4 Land Cover and Lot Size	17
4.5 Livestock Production and Lot Size	21
4.6 Farm Use of Small Lots	22
4.7 Non-farm Use of Small Lots.....	23
Section 5: Agricultural Production Options on Small Lots.....	25
5.1 Production Efficiency on Small Lots	25
5.2 Potential Revenue Range on Small Lots.....	26
Section 6: Conditions Required for Small Lot Viability	28
6.1 Opportunities for New Farm Start-ups	28
6.2 Farmland Tenure: Leasing	30
Section 7: The Role and Impact of Small Lots on Farm Production in Chilliwack.....	31
7.1 Contribution of Small Farm Lots in Chilliwack	31
7.2 Value Added Activities on Small Lots	32
7.3 Lot Size and Farm Practice Complaints	35

7.4 Optimal Lot Size and the Long-Term Impacts of Subdivision of Farm Parcels.....	35
7.4.1 Subdivision in the Township of Langley	36
7.4.2 Subdivision in the Comox Valley	37
7.5 Impact of Additional Residential Uses	38
7.6 Economic Development Rationale for Small Lots	39
7.7 Production Opportunities on Small Lots	40
7.8 Social Benefit Rationale for Small Lots.....	41
Section 8: Summary of Findings.....	42
Section 9: Conclusions and Recommendations	44
9.1 Recommendations for Boundary Adjustment Applications	45
9.1.1 Boundary Adjustment Applications and Long-Term Agricultural Growth and Development in the ALR	45
9.1.2 Policy Considerations for Boundary Adjustments in the ALR	46
9.2 Alternatives to Use of Boundary Adjustments for Farm Family Planning.....	48
9.3 Recommendations for Future Planning in Chilliwack	49
9.4 Recommendations for Future BC Assessment Changes	49

List of Tables

Table 1. Percent of ALR lots being farmed in several agricultural municipalities (Source: Various ALUIs).	22
Table 2. Potential revenues from a five-acre agricultural lot (Source: BC Min. of Agriculture, 1998, updated).	27
Table 3. Proportion of residential and farmland mortgage for a \$900,000 property.	30
Table 4. Proportion of land area with Farm Class that is leased (Source: BC Assessment, 2016).....	31
Table 5. Small lot contribution to farming in Chilliwack (Source: ALUI, 2012).	32
Table 6. Small lot contribution to intensive farming and value-added activities in Chilliwack (Source: ALUI, 2012).	32
Table 7. Estimated production value (2009 levels) of subdivided farmland in the Township of Langley (Source: BC Ministry of Agriculture and Lands, 2009).	36
Table 8. Estimated production value (2016 levels) of subdivided farmland in the Township of Langley (Source: Township of Langley GeoSource map, 2016).....	37
Table 9. Current Land use on 16 small lots that were subdivided from an 80-acre lot, Township of Langley (Source: BC Ministry of Agriculture, 2009 and updated in 2016).	37
Table 10. Change in agricultural use in agricultural parcels with subdivision applications in Comox, BC between 1990 and 2007 (Source: BC Ministry of agriculture, 2007).....	38

List of Figures

Figure 1. Percent of lots and total acres by parcel size in the ALR in Chilliwack (Source: ALUI, 2012).	11
Figure 2. Parcel size distribution - percent of ALR by parcel size in lower mainland municipalities (Source: Various ALUIs).....	12
Figure 3. Agricultural land use in Chilliwack by ALR Lot Size (Source: ALUI, 2012).	13
Figure 4. Proportion of land use based on assessment (Source: BC Assessment, 2013).	14
Figure 5. Proportional land use based on land use assessment codes (Source: BC Assessment, 2013).	15
Figure 6. Proportion of lot size and total farmed area in ALR, Chilliwack (Source: ALUI, 2012).	16
Figure 7. ALR parcel size distribution by number of parcels in Chilliwack (Source: ALUI, 2012).....	16
Figure 8. ALR parcel size distribution - number of parcels in neighbouring communities (Source: ALUIs).....	17
Figure 9. Proportional land cover type by ALR parcel size (Source: ALUI, 2012).....	18
Figure 10. Proportion of ALR lots covered by forage and non-forage crops, by lot size (Source: ALUI, 2012). .	18
Figure 11. Forage crop production by lot size (Source: ALUI, 2012).....	19
Figure 12. Nursery crop production by lot size (Source: ALUI, 2012).....	20
Figure 13. Berry crop production by lot size (Source: ALUI, 2012).....	20
Figure 14. Non-forage crop types by lot size (Source: ALUI, 2012).	20
Figure 15. Livestock activity by parcel size (Source: ALUI, 2012).....	21
Figure 16. Equine activity by lot size (Source: ALUI, 2012).....	22
Figure 17. Percent of lots with some farming activity in select BC municipalities (Source: Various ALUIs).....	23
Figure 18. Non-farm uses (besides residential) by parcel size in Chilliwack ALR (Source: ALUI, 2012).....	24
Figure 19. Annual gross farm receipts per acre by farm size in the USA (Source: USDA Census Reports).....	26
Figure 20. Price per acre of farmland in Chilliwack for different lot sizes (at least 2 acres in size) between 2011 and 2015 (excluding residential component). Black line represents power trendline. (Sources: landcor sales data and CREA).....	29
Figure 21. Proportion of farm lots that are leased per parcel size category (Source: BC Assessment, 2013)....	31
Figure 22. Value added agricultural activities (Source: ALUI, 2012).....	34
Figure 23. Value added agricultural activities (Sources: Circle Farm tour Map and Farm Fresh Guide, 2012). .	34
Figure 24. Vacancy rates of agricultural lots by parcel size in Chilliwack (Source: ALUI, 2012).	40

Executive Summary

[To be completed after feedback on Draft Report is received.]

Section 1: Introduction

Chilliwack is a vibrant agricultural community located in the eastern end of the Lower Fraser Valley. Chilliwack contains a total of 41,862 acres¹ of land in the Agricultural Land Reserve (ALR), and the local government is responsible for reviewing all applications for modifications to the ALR (e.g. non-farm uses, exclusions, inclusions, subdivisions and boundary adjustments). The latter application type – boundary adjustments – does not need to be sent to the Agricultural Land Commission (ALC), but is directly decided at the local government level.

Section 10(1)(c) of the *Agricultural Land Reserve Use, Subdivision and Procedure Application Regulation*² authorizes Approving Officers appointed under the Local Government Act to approve boundary adjustment applications that meet certain criteria (for a more detailed description see Section 2.3).

In Chilliwack, boundary adjustment applications are frequently referred by the City's Approving Officer to the Agricultural Advisory Committee (AAC). The AAC is appointed by Council to provide recommendations with respect to the anticipated effect of proposals on the agricultural potential of the subject property, and the effect of the proposals on adjacent ALR properties and surrounding agricultural production. These recommendations help to determine the extent to which a proposal will allow for the enhancement of the owner's overall farm or for the better utilization of farm buildings for farm purposes.

Over the last few years, the AAC has expressed increasing concern about the agricultural viability of smaller lots (e.g. under 10 acres, and particularly those under 2 acres) created through boundary adjustment, and the loss of viable agricultural land. This study will be used to ensure future boundary adjustment decisions align with Chilliwack's long term objectives for sustainability of the agriculture industry.

The goal of this study is to determine the agricultural viability of small farm parcels, i.e. those under 10 acres, and analyze their effect on the agriculture industry in Chilliwack, in order to inform decision-making regarding future boundary adjustment requests involving land located within the ALR.

This study provides an assessment of:

- The status of agriculture on small farm parcels (with a focus on parcels 2 - 10 acres in size);
- The types of agricultural activity most suited to small farm parcels;
- The minimum lot size and other conditions required for viable farm activity; and
- The role of small lot agricultural production in Chilliwack, and the extent to which it contributes to (or detracts from) Chilliwack's agriculture industry.

¹ According to the 2012 Agricultural Land Use Inventory. Located at: http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/land-use-inventories/chilliwack2012_aluireport.pdf

² Located at: http://www.bclaws.ca/civix/document/id/complete/statreg/171_2002#part5

1.1 A Definition of Small Lot Agriculture

For the purpose of this report, small lot agriculture refers to parcels under 10 acres (4 ha). BC Assessment uses three size categories to assess farm tax status: Under 2 acres (0.8 ha); 2 – 10 acres (0.8 – 4.0 ha); and over 10 acres (4.0 ha)³. A report published by the BC Ministry of Agriculture refers to small lots as being 2 – 10 acres (0.8 – 4.0 ha)⁴. It is worth noting that the Small Lot Agriculture Zone within the City of Chilliwack has a minimum lot size of 5 acres (2 ha) and that boundary adjustments between two or more adjacent parcels to create “efficient use of agricultural land or better utilization of farm buildings” may allow for the creation of parcels that are 2 acres (0.8 ha)⁵. Other investigations into small lot agriculture, such as that published by the District of Kent, may use different approaches.⁶

1.2 Biophysical Suitability for Farming in Chilliwack

The City of Chilliwack, located in Fraser Valley of BC, has some of the most productive agricultural land in Canada. The City has a population of 80,000 on a land base of 25,900 hectares (63,973 acres), and includes the communities of Sardis, Vedder Crossing, Rosedale, Yarrow, and Greendale. Approximately two-thirds of the Chilliwack land base falls within the Agricultural Land Reserve (ALR). The ALR is made up of two distinct areas: the Fraser River Valley bottom, which accounts for 14,000 hectares (34,580 acres), and Ryder Ridge (part of the foothills of the Cascade Mountains), which has about 950 hectares (2,346 acres)⁷. Another 1,200 hectares (2,964 acres) of ALR is located within First Nations’ Reserves and land used for roads and highways. According to an Agricultural Land Use Inventory (ALUI) conducted in 2012, over 1,400 hectares (8% of the ALR) were underutilized and available with potential for farming (3,458 acres)⁸.

Soil, water, and climate are the three main contributors to successful cultivation. Agricultural capability is determined by soil characteristics and climate. Over 100 years of agricultural development in Chilliwack has led to the improvement of agricultural soils by reducing limitations through drainage (to reduce excess water), irrigation (to reduce soil moisture deficits), dykes (to reduce inundation by the Fraser and Chilliwack Rivers), and rock picking (to reduce stoniness)⁹. Through these efforts, the agricultural capability rating for Chilliwack has improved. Almost 60% of Chilliwack soils are Class 1 and 2, indicating that Chilliwack farmers have the potential to grow a wide variety of crops relative to other agricultural areas in Canada.

³ About Farm Land Assessment, BC Assessment. <https://www.bcassessment.ca/Services-products/property-classes-and-exemptions/farm-land-assessment/about-farm-land-assessment>

⁴ The Role of Small Lot Agriculture in South Coastal BC, 1995. BC Ministry of Agriculture Food and Fisheries. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/800-series/825400-2_small_lot_agric_in_south_coastal_region.pdf

⁵ City of Chilliwack Zoning Bylaw No. 2800, 2001. Section 7: Agricultural Zones. <http://www.chilliwack.com/main/attachments/Files/377/Section%2007%20%2D%20Agricultural%20Zones3%2Epdf>

⁶ According to a report put out by the District of Kent in 2004, the provincial definition of small lot agriculture is any production on ten acres or less, or less than \$50,000 per year in income. The District of Kent expanded that definition to include lot sizes of 20 acres or less, and to include small lot production activity when the lot belongs to a larger land title, because boundary ownership does not always coincide with production limits. By Kent’s definition, even a large property may have a small lot enterprise, such as five acres of hedging cedars on a dairy farm. Another example could be that of a farm with a large acreage in hay and corn also growing market vegetables for local consumption.

⁷ Chilliwack Agricultural Area Plan, 2012. <http://www.chilliwack.com/main/attachments/Files/1979/AAP%20Final%20Report%20January%2016%2C%202012%2Epdf>

⁸ Agricultural Land Use Inventory for the City of Chilliwack. Conducted in 2012, published in 2015. BC Ministry of Agriculture. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/land-use-inventories/chilliwack2012_aluireport.pdf

⁹ Chilliwack Agricultural Area Plan, 2012. <http://www.chilliwack.com/main/attachments/Files/1979/AAP%20Final%20Report%20January%2016%2C%202012%2Epdf>

Section 2: City of Chilliwack Policies and Regulations

The agricultural industry is a very important contributor to the economy of Chilliwack and includes more than 800 farms and considerable support services in the area. The sector supports more than 4,500 jobs locally and generates more than \$600 million in economic activity¹⁰.

2.1 Official Community Plan

The City of Chilliwack's 2040 Official Community Plan (OCP), Bylaw No. 4025, was adopted in 2014¹¹. There are five goals embedded within the OCP, and Goal #2 is to *Strengthen Agriculture: Protect the urban-farmland interface, and ensure the economic viability of agriculture*. Objectives associated with Goal #2 include protecting the farmland base, minimizing urban/agricultural user conflicts, creating investment, and supporting agri-business.

In order to achieve these goals, the following policies are set forward:

- Implement the Agricultural Area Plan (AAP);
- Promote Chilliwack's primary role in agriculture; and
- Promote agricultural development.

Within the implementation of the AAP, the following actions are identified and are relevant to the objectives of this small lot agriculture study:

- Seek stakeholders' input regarding the effects of boundary adjustments on agricultural activity.
- Discourage residential estate development and non-farm uses in the ALR.

2.2 Zoning Bylaw

Chilliwack's zoning bylaw was adopted in 2001. The zoning bylaw contains agriculture-related zones including Agricultural Food Processing, Agriculture Lowland, Agriculture Upland, Agriculture Small Lot, Agriculture Residential, Agriculture Residential-Accessory and Agriculture Commercial¹². These zones allow on-farm food processing at an appropriate on-farm scale. Generally, large-scale food processing industries are located on land not zoned for agriculture. Minimum lot sizes for the agricultural zones are as follows¹³:

- AL (Agriculture Lowland): 7.5 ha (18.5 acres) except for boundary adjustment or homesite severance;
- AU (Agriculture Upland): 7.5 ha (18.5 acres) except for boundary adjustment or homesite severance;
- AS (Agriculture Small Lot): 2.0 ha (5 acres) except for boundary adjustment or homesite severance;
- AR (Agriculture Residential): 1.0 ha (2.5 acres) if prior approval for homesite severance has been received from the ALC.

¹⁰ Chilliwack Agricultural Area Plan, 2012.

<http://www.chilliwack.com/main/attachments/Files/1979/AAP%20Final%20Report%20January%2016%2C%202012%2Epdf>

¹¹ City of Chilliwack Official Community Plan. Bylaw No 4025, 2014. <http://www.chilliwack.com/main/page.cfm?id=2387>

¹² City of Chilliwack Zoning Bylaw No. 2800, 2001. Section 7: Agricultural Zones.

<http://www.chilliwack.com/main/attachments/Files/377/Section%2007%20%2D%20Agricultural%20Zones3%2Epdf>

¹³ City of Chilliwack Zoning Bylaw No. 2800, 2001. Section 7: Agricultural Zones.

<http://www.chilliwack.com/main/attachments/Files/377/Section%2007%20%2D%20Agricultural%20Zones3%2Epdf>

2.3 Processes that Create Small Lots

A subdivision is the process of dividing land into two or more legal parcels. Lot line adjustments between two or more separate parcels, which do not create additional parcels, are also considered subdivisions but are typically referred to as boundary adjustments.

Applications for subdivision in municipalities must be submitted by the landowner to the local government for approval, prior to being forwarded on to the ALC for a final decision¹⁴. However, according to the *ALR Use, Subdivision, and Procedure Regulation* (BC Regulation 171/2002)¹⁵, a subdivision approving officer under the *Land Title Act*, the *Local Government Act*, or the *Strata Property Act* may authorize or approve a plan of subdivision without the approval of the ALC if the proposed plan achieves one or more of the following:

- Consolidates 2 or more parcels into a single parcel by elimination of common lot lines;
- Resolves a building encroachment on a property line and creates no additional parcels;
- Involves not more than 4 parcels, each of which is a minimum of 1 ha (2.5 acres), and results in all of the following:
 - No increase in the number of parcels;
 - Boundary adjustments that, in the opinion of the approving officer, will allow for the enhancement of the owner's overall farm or for the better utilization of farm buildings for farm purposes;
 - No parcel in the reserve of less than 1 ha (2.5 acres);
- Establishes a legal boundary along the boundary of an ALR.

In Chilliwack, both types of ALR applications are frequently referred by the City's Approving Officer to the Agricultural Advisory Committee (AAC). The AAC is appointed by Council to provide recommendations regarding the anticipated effect of proposals on the agricultural potential of the subject property, and the effect of the proposal on adjacent ALR properties and surrounding agricultural production. Their recommendations aid in understanding the extent to which a proposal will allow for the enhancement of the owner's overall farm, or for the better utilization of farm buildings for farm purposes. The AAC is expected to consider the AAC terms of reference and the aims and objectives of the City of Chilliwack's Agricultural Area Plan when conducting their reviews.

Applications requiring ALC approval are also referred to the AAC for a recommendation to Council. In making a recommendation to Council, the AAC may do the following:

- Recommend the application be forwarded to the ALC "without comment";
- Recommend the application be forwarded to the ALC "with support";
- Recommend the application be forwarded to the ALC "without support"; or,
- Recommend that Council neither support the application, nor forward the application to the ALC.

¹⁴ Subdivision near agriculture: a guide for approving officers. 1996. http://www.alc.gov.bc.ca/assets/alc/assets/library/land-use-planning/subdivision_near_agriculture_a_guide_for_approving_officers_1996.pdf

¹⁵ Agricultural Land Reserve Use, Subdivision and Procedure Regulation (BC Regulation 171/2002), Sections 9, 10 and 11 "Permitted Subdivisions". http://www.alc.gov.bc.ca/assets/alc/assets/legislation-and-regulation/policies/alc_-_policy_12_-_alr_subdivision_approval_by_approving_officers_final.pdf

The AAC is encouraged to include a detailed rationale as to the advice provided to Council on matters relating to agriculture, agri-business, and agri-tourism in the City of Chilliwack as part of their recommendation.

The City of Chilliwack's AAC regularly reviews and provides comments, as well as motions of support (or non-support) regarding subdivision applications (including boundary adjustments). Over the course of five meetings in 2016 for which information is available (March, April, June, July, and September), the AAC reviewed 14 subdivision applications. Of these 14 applications, 11 were supported. Reasons given for not supporting the remaining three subdivision applications include not being beneficial to agriculture overall. For one application in particular, the resulting lot sizes from the boundary adjustment would create one parcel under 10 acres and one parcel over 2 acres. This was viewed by the AAC as not viable for agriculture. It is worth noting that motions of support are not always carried unanimously.

Section 3: Literature Review

3.1 Studies on the Agricultural Suitability and Small Lots

According to the ALUI, agricultural sectors that require large land bases, such as dairy or berry, may find it difficult to access land for farm expansion or for starting new operations in Chilliwack¹⁶. Dairy operations, for example, are unsuited to small lots as a single cow produces sufficient manure per year to fertilize 0.4 ha (1 acre) of forage production¹⁷. This means that a dairy operation consisting of 50 cows would require access to 20 ha (50 acres). Without sufficient land area to utilize the manure as a fertilizer, the dairy operation would have to find other, more expensive, methods to manage the manure. In addition, working farms require sufficient space to operate in order to avoid odour, dust, and noise conflicts with nearby non-farm properties. For context, the City of Chilliwack has approximately 800 farms, and more than 300 of these farms are each on 4 hectares (10 acres) or less. Future agricultural growth on small parcels is possible if it comes from new commodity types and by intensifying land use rather than finding new land for agricultural expansion. Smaller lots may be suitable for mushrooms, floriculture, poultry, and container nurseries. Small lots are also suitable for start-up farmers and established farmers wanting to expand through leases.

A 1999 BC Ministry of Agriculture, Food, and Fisheries report¹⁸ explored the role of small lot agriculture in South Coastal BC. The study found that 55% of ALR lots in the region were less than 10 acres and these lots represented 13% of the land classified as farm. Size was not found to be strongly connected to output, either in terms of production or profit. Small lot agriculture was found to be diverse and included poultry, nursery, mushroom, floriculture, greenhouses, small scale sheep, beef and forage. Only about 5-10% of small agricultural lots were likely to be used for intensive agricultural purposes. Conversely, small lots were found to be challenging for dairy, hogs, and large scale field crops such as grains.

3.2 Studies on the Impact of Zoning on Agricultural Lot Size

Eagle et al. (2014) also evaluated the impact of land use, geography, and zoning characteristics on farmland value on the Saanich Peninsula on Vancouver Island. The data demonstrated that farmland located closer to urban centres and/or to the commuting highway commanded a premium price if it had a residence on it. Similarly, smaller agricultural properties with a residence also sold at higher prices¹⁹. Perhaps most importantly, farmland values (especially for 2.0 ha to 4.0 ha (5 to 10 acre) parcels) were found to encourage rural residential use in this region rather than to stimulate agricultural production on small lots. Furthermore, the study found that increased residential development pressure could promote the shift from active agriculture to rural estates or hobby farms that have little agricultural productivity, with the benefit of lower

¹⁶ Agricultural Land Use Inventory for the City of Chilliwack. Conducted in 2012, published in 2015. BC Ministry of Agriculture. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/land-use-inventories/chilliwack2012_aluireport.pdf

¹⁷ Agricultural Land Use Inventory for the City of Chilliwack. Conducted in 2012, published in 2015. BC Ministry of Agriculture. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/land-use-inventories/chilliwack2012_aluireport.pdf

¹⁸ The Role of Small Lot Agriculture in the South Coastal Region, 1999. BC Ministry of Agriculture, Food, and Fisheries. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/800-series/825400-2_small_lot_agric_in_south_coastal_region.pdf

¹⁹ Eagle, A. Eagle, D.E., Stobbe, T.E., and G.C. Van Kooten. 2014. Farmland Protection and Agricultural Land Values at the Urban-Rural Fringe: BC's Agricultural Land Reserve. American Journal of Agricultural Economics Advance Access.

assessed land values due to the ALR location.

In 2001, B. Smith completed a report²⁰ that reviewed historical subdivision applications as part of the District of North Cowichan's Agricultural Area Plan work. The report investigated the conditions under which subdivision applications were being approved by the ALC. The analysis included 68 ALR subdivision applications that had been submitted to the ALC between 1988 and 2000. The average size of the parcels was relatively large at 9.7 hectares (23.9 acres) and the agricultural capability was modestly poorer compared to all ALR lands on Vancouver Island, but considerably better when compared to ALR lands Province wide.

Close to half of all properties were described as being used for a form of residential use only. This points to the agricultural underutilization of lots as a prime reason for being considered for subdivision. All parcels within the 68 applications were in one of three agricultural zoning designations which differed only in minimum lot sizes. Zoning bylaws represent a regulatory instrument for policy implementation. Landowners look to zoning regulations as council's guide as to what is considered appropriate land use. One of the recommendations was to remove minimum lot size provisions applied to the ALR and replace it with a policy that neither lot line adjustments nor subdivision of land in the ALR would be supported unless approved by the Commission. The ALC would require the proponent to clearly describe how the proposed subdivision would create an improvement for agriculture. The report concluded that BC already has a fairly heavily parcelized farmland base and that (with a few exceptions) land in the ALR should only be subdivided in cases where there is a clearly demonstrated improvement for agriculture.

3.3 Studies on the Challenges Associated with Farming Small Lots

The District of Kent investigated challenges that small-lot farmers were experiencing within its jurisdiction in 2004²¹. The concern was that small lot farmers do not benefit from the same level of extension or marketing services as those in the larger commodity sectors. Furthermore, residential growth in the community has led to increased conflicts between rural and urban dwellers. Increased traffic flow was a source of concern to many small lot operators, including the ability to safely move slow agricultural vehicles on the highway, traffic flow problems, and long waits to get access to a field. Other problems include garbage dumped in rural areas; loose dogs; trespassing, and urban residential complaints of farm noise and smells.

The District of Kent defined "small lot" by including lot sizes of 20 acres or less, as well as including small lot production activity when the lot belonged to a larger land title, because boundary ownership did not always coincide with production area. There were 23 small lot agriculture holdings that were leasing land to other farmers. Half of the small lot parcels were in agricultural production, while the other half were primarily being used for residential purposes. In terms of land being kept from production, the survey revealed five reasons why some lots and/or portions of lots were not in production:

1. Owners are retired. Many people living on small lots are retired and do not have the energy to start and maintain agricultural production.
2. Rural residential. Some people want the country experience that a small lot has to offer, but

²⁰ Smith, B. 2001. District of North Cowichan ALR Subdivision Application Review from 1988 to 2000. A component of the District of North Cowichan Agricultural Area Plan.

²¹ Kent Agricultural Advisory Committee, 2004. Small lot agriculture in the District of Kent, BC. http://www.fraserbasin.bc.ca/_Library/FVR/report_fvr_small_lot_ag_2004.pdf

commute to a job in the city.

3. Marginal capability. The holding is too small or is unusable for agriculture production because of drainage problems, a slough on the property, etc.
4. Lack of resources. Some people do not have enough money to start the agricultural production of their choice. Machinery and other costs may be too high.
5. Lack of knowledge. As with any business, agriculture production requires a knowledgeable operator to make it profitable.

Of the 143 farms surveyed in Kent, 60 were larger than ten acres (of those, half were dairy farms). The other 83 farms (58%) were ten acres or less, fitting the provincial definition of small lot agriculture. These operations included a variety of livestock, field crops, or even fruit and vegetable gardens for personal or community use. No dairy cattle were reported on lots less than 20 acres.

One of the goals of the investigation was to explore how challenges could be overcome in order to capitalize on a high volume of tourist traffic that passes through Kent on the way to the Village of Harrison during the summer months. However, agri-tourism was not embraced by many operators. Many farms did not provide an agri-tourism component because of the demands it made on the landowner, as well as issues with insurance and bio-security. Out of 143 farms, only 19 offered agri-tourism, and 17 other farms were considering agri-tourism opportunities.

3.4 Studies on the Long-Term Viability of Small Lot Farms

A 2009 report by the BC Ministry of Agriculture and Lands²² investigated the question: do small lots created by subdivision or long range planning initiatives lead to more intensive agricultural production or more non-farm use? Data from ALUIs performed in the Township of Langley was used to help answer this question. In order to specifically investigate the long-term impacts of small lot creation, 5-acre lots that were formed prior to the ALR in 1973 were analyzed. Surrounding ALR lots were at least 19 acres in size, which aligns with the minimum lot size outlined in the Township of Langley's Rural Plan (adopted in 1993). Adjacent properties provide an ideal area for comparison because other factors (such as soils, climate, water availability) are similar. Three areas, totaling 46 small lots (2.0 – 4.9 acres) and 29 larger lots (7 to 110 acres) were analyzed and compared. Only 13% of the small lots were being farmed while 80% of the larger lots were being farmed. The estimated annual agricultural financial output per acre on the smaller lots was only 2% of that generated on the larger lots (\$173/acre/year compared to \$8,183/acre/year). There was no indication of any intensive agricultural production occurring on the small lots, indicating that the long-term implications of the subdivision were that the lots attracted non-farming landowners.

A pilot study undertaken by the BC Ministry of Agriculture & Lands and the ALC²³ in the Comox-Strathcona Regional District (CSRD) in 2007 sought to understand the effects of subdivision on land use in the ALR, and

²² Agricultural activity on small agriculture lots in the Fraser Valley created by subdivision and long term planning initiatives. Examples in the Township of Langley. BC Ministry of Agriculture and Lands, 2009. A redacted version of this report is available at: http://docs.openinfo.gov.bc.ca/Response_Package_AGR-2016-63087.pdf

²³ Land Use Activity and Parcel Size in the ALR: A pilot study in Comox-Strathcona Regional District, 2007. BC Ministry of Agriculture and Lands and the Agricultural Land Commission. Available at: http://docs.openinfo.gov.bc.ca/Response_Package_AGR-2016-63038.pdf

the relationship between parcel size, property value and agricultural activity. The study found that in 2007, 61% of all ALR parcels in the CSRD were less than 20 acres (8 ha) and that on parcels that had been subdivided, the amount of land in agricultural production decreased by 10.5% between 2002 and 2007. On parcels where subdivision applications were refused, original agricultural uses were more likely to be retained and new agricultural uses were more likely to occur. The average real estate market value (per acre) of agricultural properties less than 10 acres (4 ha) was almost 8 times higher than properties larger than 40 acres (16 ha).

Section 4: The Status of Agriculture on Small ALR Lots

4.1 Distribution of Lot Sizes in the ALR

One of the key background references for this report is the “City of Chilliwack Agricultural Land Use Inventory” which was conducted by the BC Ministry of Agriculture in 2012²⁴. Using a cadastre that was current at the time, the inventory analyzed a total of 3,171 lots in the ALR. Figure 1 outlines the distribution of lot sizes in the ALUI dataset by number of lots and total area. The vast majority of the lots, 2,276 (72%), were less than 10 acres. Just under half of those small lots, 1,006, were less than 2 acres in size. However, while small lots make up the majority of lots in Chilliwack’s ALR, they comprise a very small amount of the total ALR area. Lots that are 10 acres or greater in size make up 81% of the total ALR area, while lots that are less than 2 acres in size make up just over 2% of the total ALR area. As indicated by Figure 2, Chilliwack’s ALR parcel size distribution is comparable to that of Lower Mainland municipalities (Township of Langley, Abbotsford, Richmond, Surrey, and Kent-Agassiz)²⁵. Richmond has the highest proportion of small lots within the ALR, while Surrey has the smallest proportion.

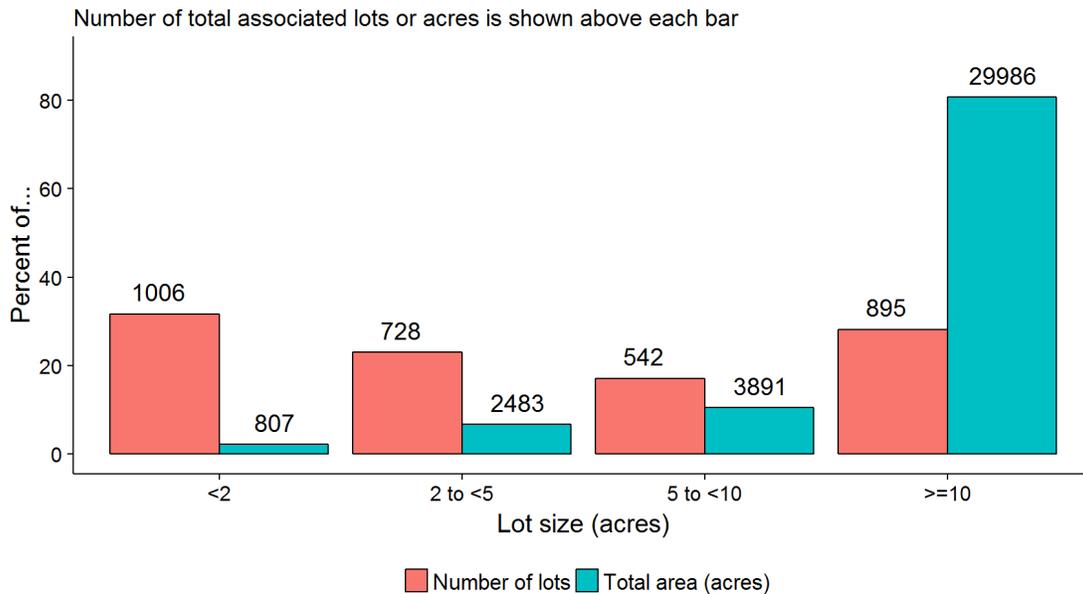


FIGURE 1. PERCENT OF LOTS AND TOTAL ACRES BY PARCEL SIZE IN THE ALR IN CHILLIWACK (SOURCE: ALUI, 2012).

²⁴ Agricultural Land Use Inventory for the City of Chilliwack. Conducted in 2012, published in 2015. BC Ministry of Agriculture. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/land-use-inventories/chilliwack2012_aluireport.pdf

²⁵ All of the South Coast ALUIs are available at: <http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agricultural-land-and-environment/strengthening-farming/planning-for-agriculture/agricultural-land-use-inventories/south-coast>

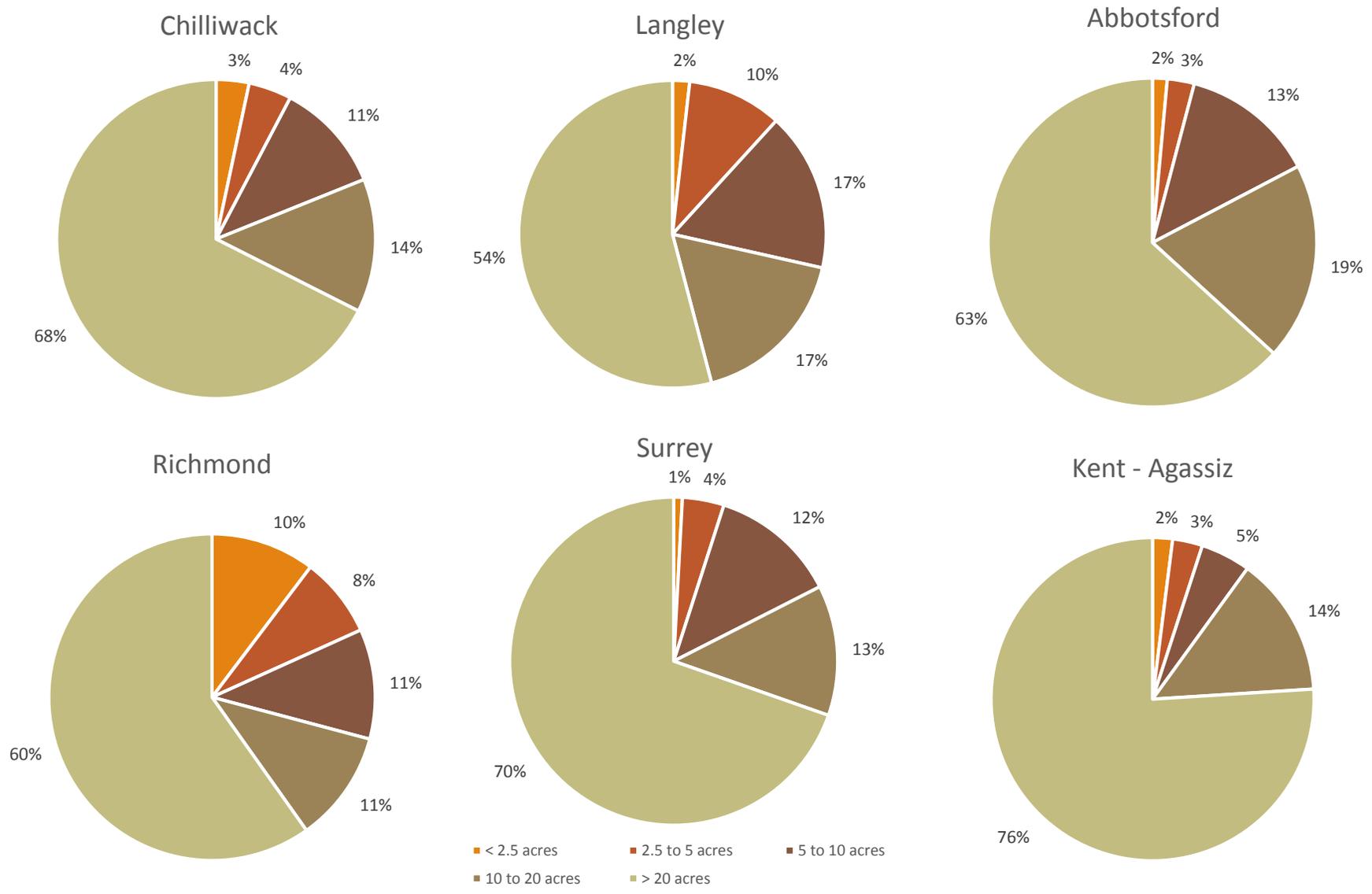


FIGURE 2. PARCEL SIZE DISTRIBUTION - PERCENT OF ALR BY PARCEL SIZE IN LOWER MAINLAND MUNICIPALITIES (SOURCE: VARIOUS ALUIs).

4.2 Land Use and Lot Size

The ALUI data allows for the analysis as to whether or not small lots contribute to – or detract from – agriculture in Chilliwack. This data includes information regarding both land use and land cover. The ALUI methodology allows for the identification of up to two types of land use per lot, as determined by the Agrologist conducting the ALUI. For example, a lot that has crops and a residential house on it would have agriculture and residential as its two types of land use. The land use categories are further summarized into three categories: “Agriculture present” (where agriculture was the use or one of the two uses), “Available for agriculture” (there was no agriculture at the time of the survey, but if land was drained, or cleared, etc. it would be suitable for agriculture), or “Alienated” (where the existing use made the land unfarmable, e.g. a large residential home on a small lot, a school, golf course, etc.).

Figure 3 outlines the land use results for Chilliwack based on the most recent ALUI, which was conducted in 2012. Large lots that are 10 acres or greater in size, have the highest percentage of agriculture present (91%). Small lots less than 2 acres in size had the lowest percentage of agriculture present (17%) and also had the highest percentage of alienated (unfarmable) lots at 65%. This data indicates that the larger the lot, the more likely it is to be farmed.

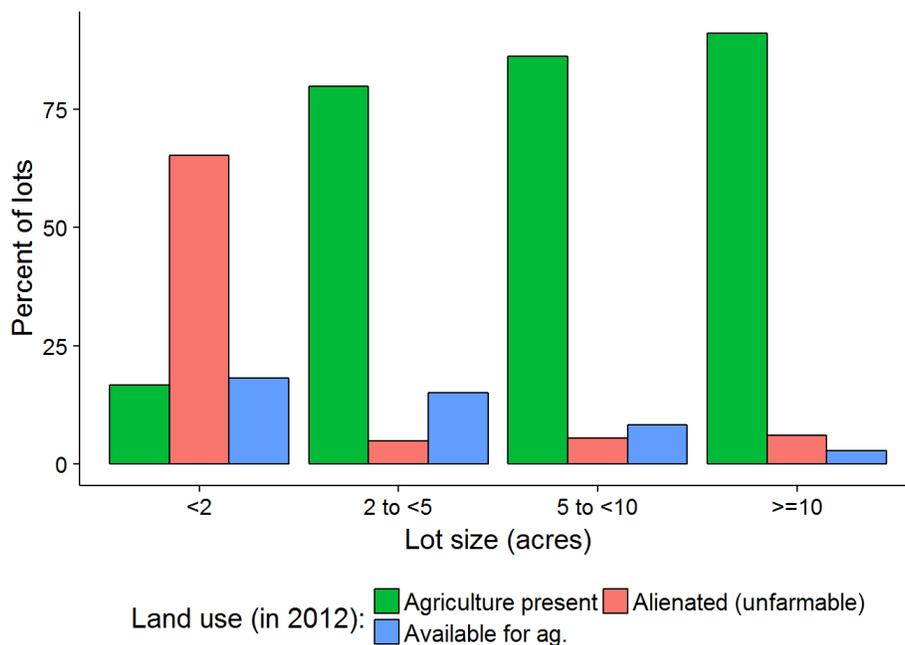


FIGURE 3. AGRICULTURAL LAND USE IN CHILLIWACK BY ALR LOT SIZE (SOURCE: ALUI, 2012).

The 2013 BC Assessment Authority (BCAA) data for the City of Chilliwack’s ALR was also analyzed in order to examine land use and parcel size²⁶. The 2013 assessment reflects the agricultural production from the summer of 2012, when the ALUI survey was conducted. BCAA has nine classes of land assessment, with Class

²⁶ This dataset was slightly smaller than the ALUI dataset (by about 180 records) as it only included the Chilliwack lowlands, and did not include properties that were already developed for non-farm uses.

1 being assigned to residential uses, and Class 9 being assigned to agricultural uses. The other classes include commercial, institutional, recreational, etc. and are grouped together as “neither agricultural nor residential” for the purposes of this analysis.

Figure 5 outlines the proportion of land use by assessment class, according to lot size. Lots that are 10 acres or greater in size had the largest proportion (93%) that were only agricultural or a combination of agricultural and residential. Conversely, small lots that were less than 2 acres had the highest proportion of lots that were solely assessed as residential (84%). This data indicates that residential uses – to the exclusion of agriculture – predominate in the smallest lot size category.

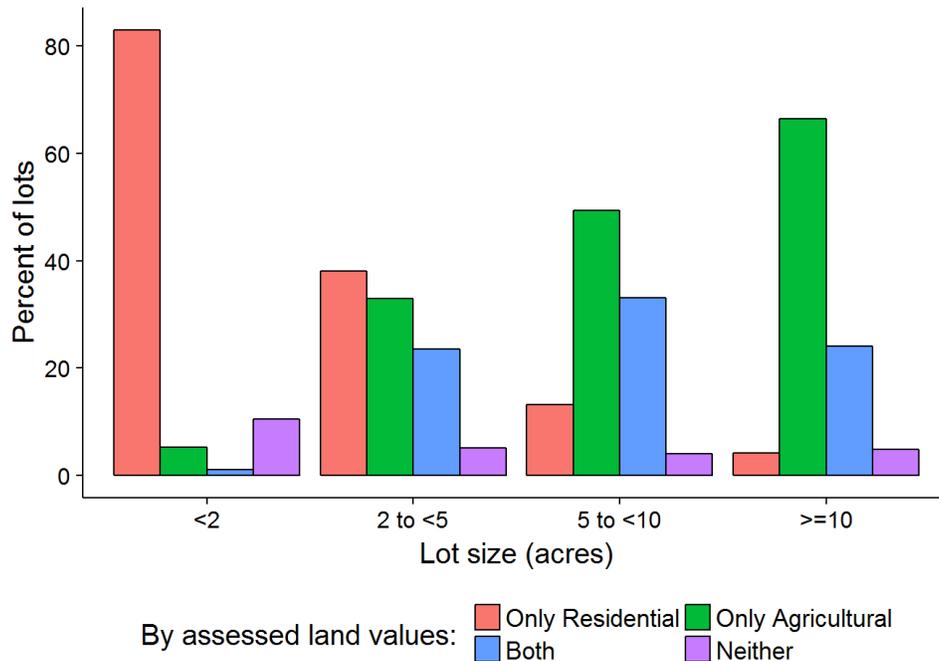


FIGURE 4. PROPORTION OF LAND USE BASED ON ASSESSMENT (SOURCE: BC ASSESSMENT, 2013).

Another method that BCAA uses is to assign a use code to each lot to indicate the primary type of land use. Use codes between 0 and 99 indicate residential uses, and use codes between 100 and 199 indicate agricultural uses. Use codes from 200 onwards for other types of use (e.g. commercial, institutional) are considered “Other” for the purposes of this study.

As Figure 5 indicates, 93% of the lots that are 10 acres or greater in size have an agricultural use code. Conversely, 82% of small lots that are less than 2 acres in size have a residential use code²⁷. This data supports the inference that the predominant type of land use on small lots of this size category is residential use.

²⁷ Figure 4 shows 84% residential use on the smallest lot size category, while Figure 5 shows 82% residential use on the smallest lot size category. The differences are due to 23 records that had discrepancies in their coding.

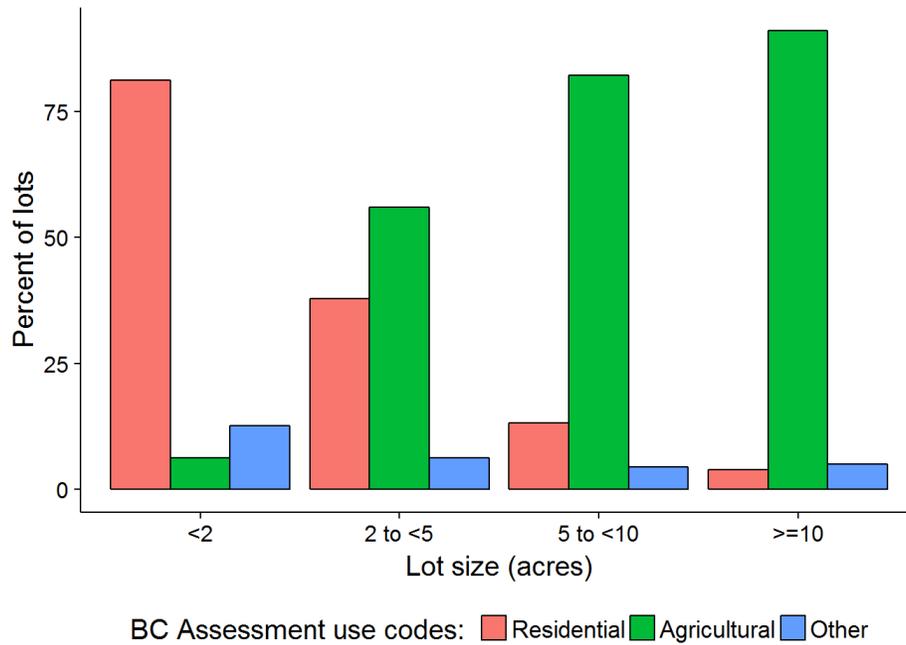


FIGURE 5. PROPORTIONAL LAND USE BASED ON LAND USE ASSESSMENT CODES (SOURCE: BC ASSESSMENT, 2013).

4.3 Status of Agriculture and Parcel Size – Chilliwack vs. Other Municipalities

When comparing Chilliwack’s ALUI data with the ALUI data from comparable local governments in the Lower Mainland, similar patterns emerge. Figure 6 depicts the amount of ALR being farmed by parcel size category. Less than 1% of the farmed area in Chilliwack is occurring on parcels less than 2 acres in size; less than 6% on parcels less than 5 acres in size. Figure 7 explores the number of parcels that exist within each lot size category for Chilliwack, and Figure 8 compares these amounts to those in other Lower Mainland municipalities. This data was derived from the ALUI data from Richmond, Surrey, Langley, Abbotsford, Chilliwack, and Kent/Agassiz. In all of these municipalities, while small lots under 10 acres make up the majority of the number of lots, they constitute a small portion of the total ALR area (refer back to Figure 2).

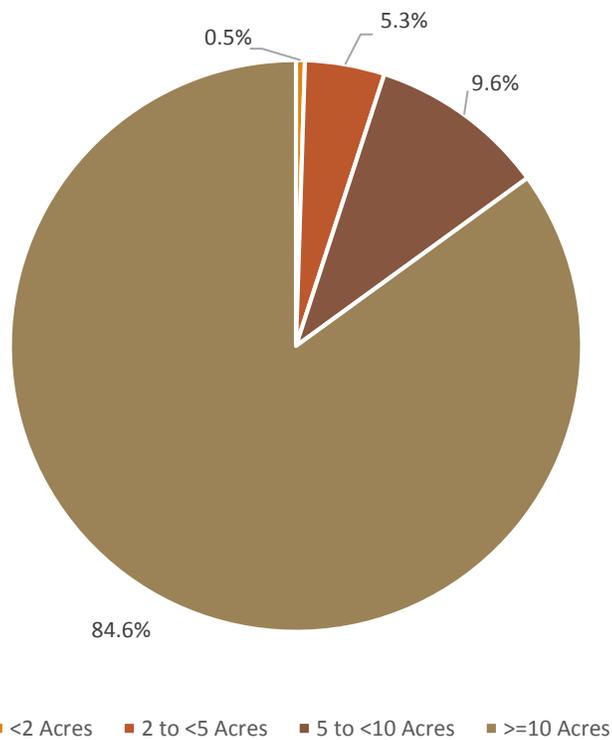


FIGURE 6. PROPORTION OF LOT SIZE AND TOTAL FARMED AREA IN ALR, CHILLIWACK (SOURCE: ALUI, 2012).

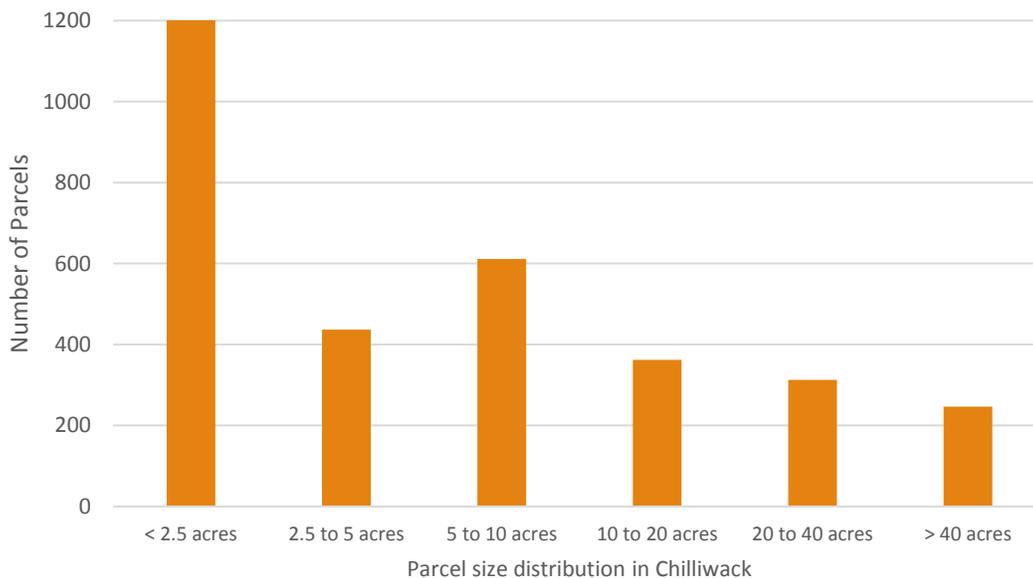


FIGURE 7. ALR PARCEL SIZE DISTRIBUTION BY NUMBER OF PARCELS IN CHILLIWACK (SOURCE: ALUI, 2012).

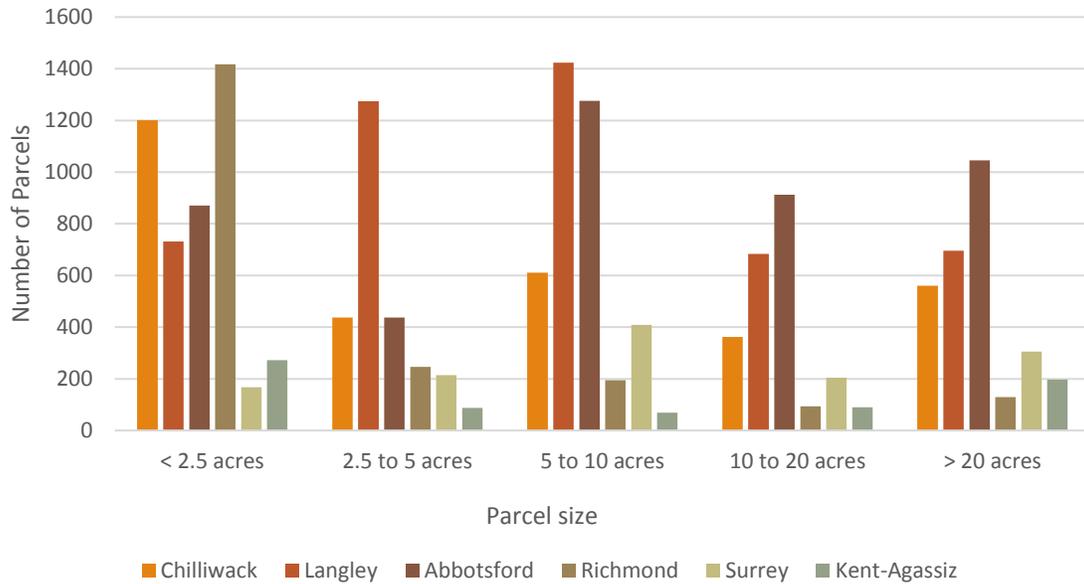


FIGURE 8. ALR PARCEL SIZE DISTRIBUTION - NUMBER OF PARCELS IN NEIGHBOURING COMMUNITIES (SOURCE: VARIOUS ALUIs).

4.4 Land Cover and Lot Size

The ALUI data can also be used to show what types of land covers are prevalent in each lot size category. Land cover is the amount of different types of physical covers on a lot, e.g. buildings, crops, water bodies, etc. One lot can have an indefinite number of covers.

At the macro level of land cover classification, land cover can be anthropogenic (e.g. human made/modified such as roads, residential buildings, and managed vegetation like lawns), agricultural (e.g. crops, farm buildings), natural (e.g. natural vegetation like trees and shrubs, and natural waterbodies like lakes), and other (e.g. roads, railways, and other infrastructure). Figure 9 demonstrates the breakdown of the main types of land covers (by percent) found in each lot size category. The less than 2-acre lot size category has the lowest proportion of farm land cover and the highest proportion of anthropogenic land cover. Conversely, the 10 acre or greater lot size category had the highest proportion of farm land cover, and the lowest proportion of anthropogenic land cover.

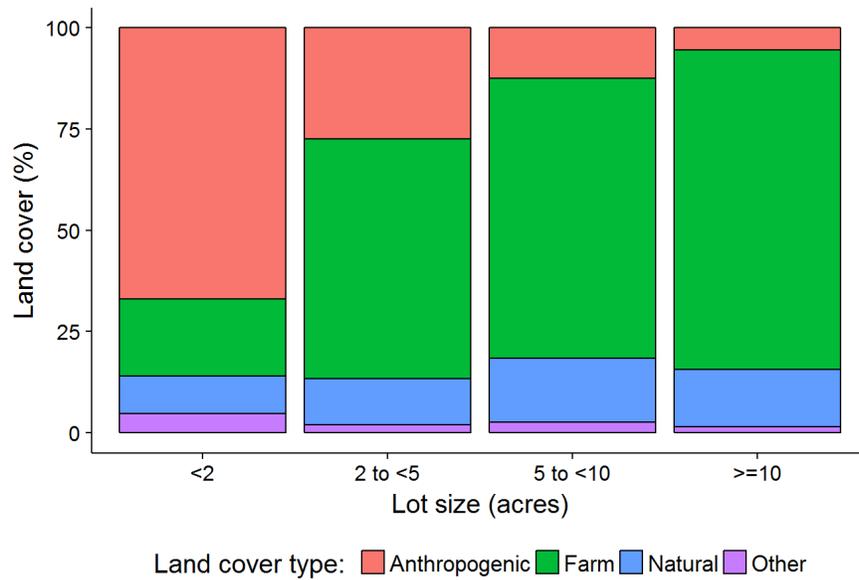


FIGURE 9. PROPORTIONAL LAND COVER TYPE BY ALR PARCEL SIZE (SOURCE: ALUI, 2012).

The ALUI data can also be used to determine the most common types of crops (land cover) and livestock (activities) that are produced on each type of lot size category. Chilliwack has a very predominant dairy industry; therefore, it is not surprising that the largest proportion of crops grown in each category are forage crops (Figure 10).

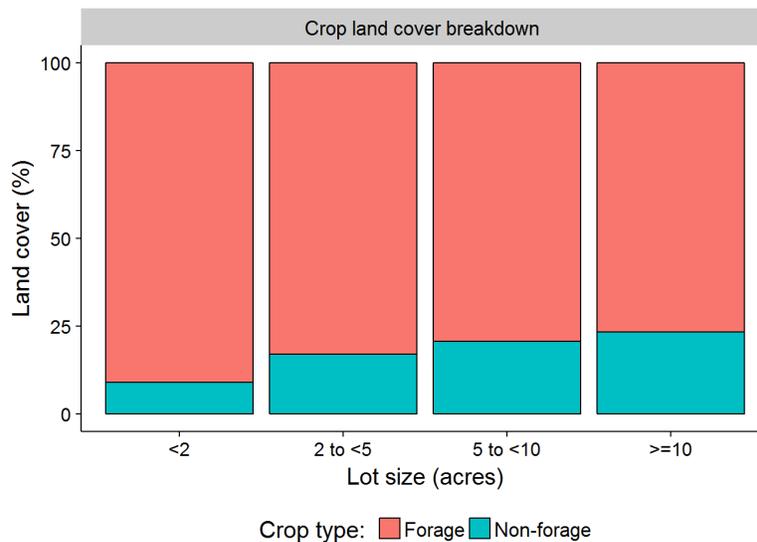


FIGURE 10. PROPORTION OF ALR LOTS COVERED BY FORAGE AND NON-FORAGE CROPS, BY LOT SIZE (SOURCE: ALUI, 2012).

However, the 91% of forage land cover in the less than 2-acre category represents 115 acres, whereas the 77% of forage land cover in the 10 acre or greater category represents 17,192 acres. This indicates that, while

many argue that small lots can encourage intensive production systems (e.g. berries, nursery crops), most of these intensive operations are being undertaken on larger ALR lots in Chilliwack.

While the proportion of forage production on small lots is high, the actual total acreage that they make up is low. Figure 11 demonstrates that 85% of forage production, by acreage, occurs on lots that are 10 acres or greater in size.

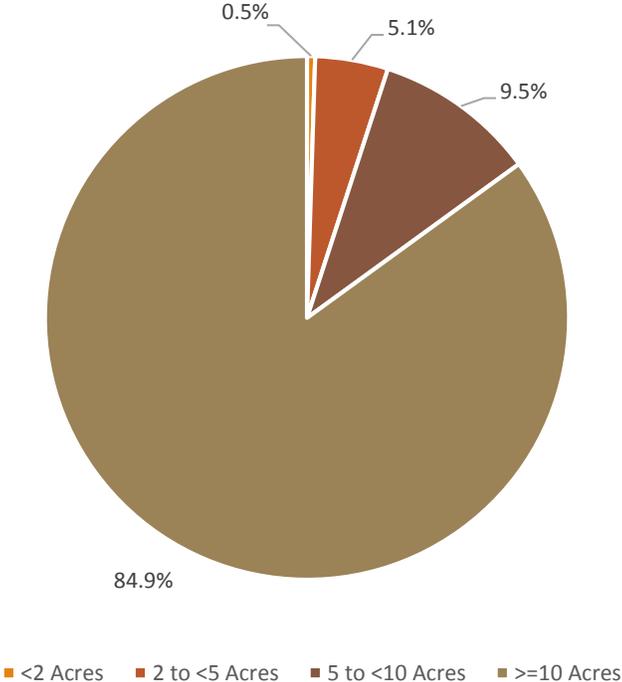


FIGURE 11. FORAGE CROP PRODUCTION BY LOT SIZE (SOURCE: ALUI, 2012).

Figures 12 to 14 indicate that lots that are 10 acres or greater in size also produce the majority of nursery, berry and vegetable crops in Chilliwack.

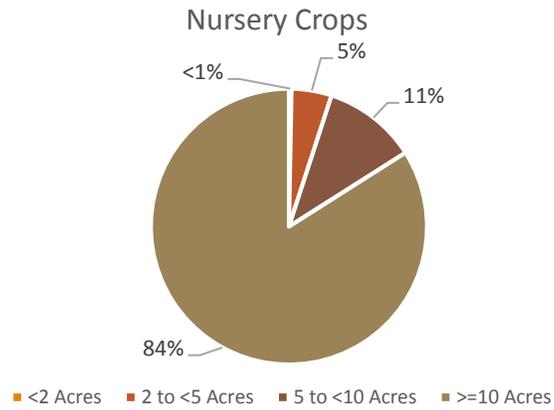


FIGURE 12. NURSERY CROP PRODUCTION BY LOT SIZE (SOURCE: ALUI, 2012).

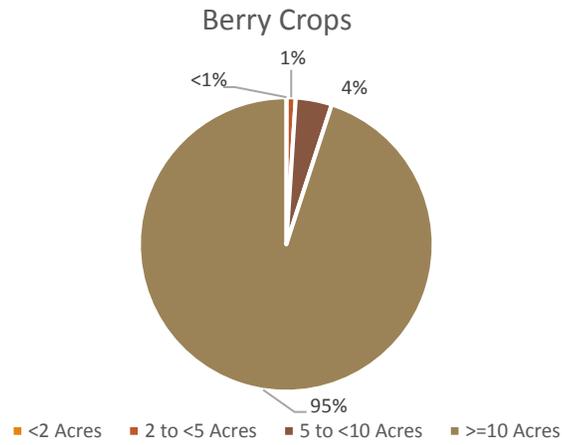


FIGURE 13. BERRY CROP PRODUCTION BY LOT SIZE (SOURCE: ALUI, 2012).

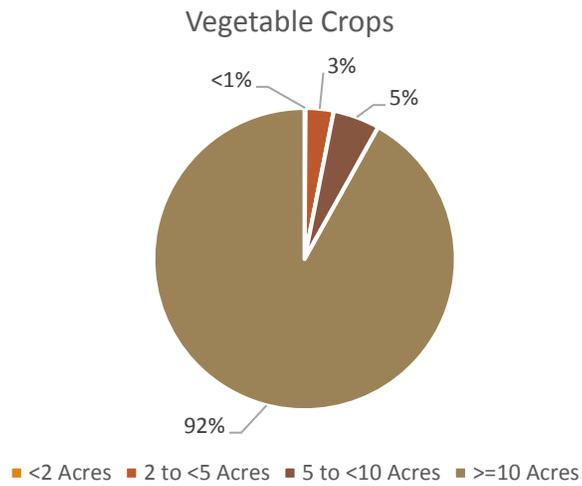


FIGURE 14. NON-FORAGE CROP TYPES BY LOT SIZE (SOURCE: ALUI, 2012).

4.5 Livestock Production and Lot Size

The 2012 ALUI also noted livestock activity on each lot, by type of livestock and scale of livestock (Figure 15). Very small scale and small scale livestock activities occur across all of the lot size categories, while most of the medium and large scale livestock activities occur on lots that are 10 acres or greater. This is especially true for dairy operations, which tend to have more extensive land area requirements. The majority of large scale poultry operations, which are more intensive, are located on lots over 5 acres in size.

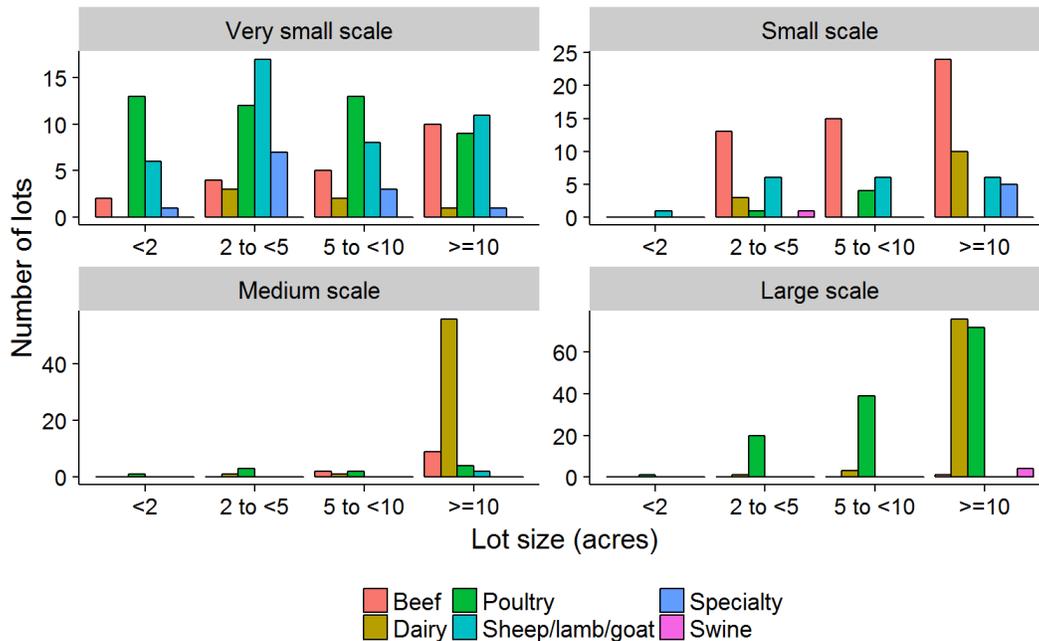


FIGURE 15. LIVESTOCK ACTIVITY BY PARCEL SIZE (SOURCE: ALUI, 2012).

Equine activities, which include horses, donkeys and ponies, were also noted in the 2012 ALUI. Very small scale and small scale equine activities were distributed across the lot size categories, as illustrated in Figure 16. While there were no large scale equine activities noted in the inventory, the majority of equine activities occurred on lots that were greater than 5 acres in size.

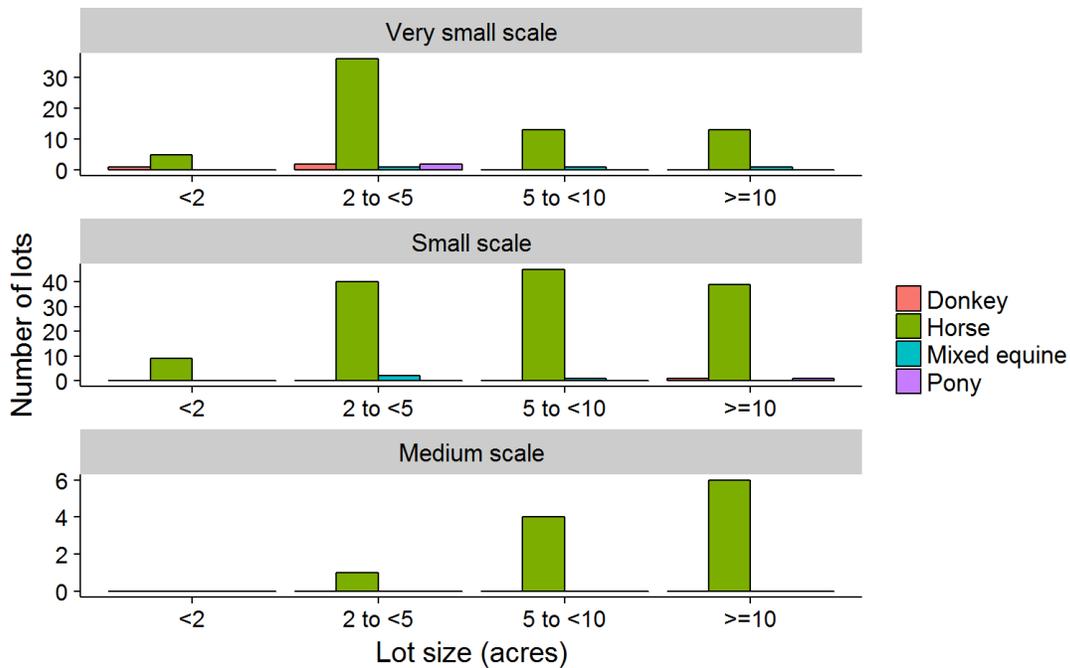


FIGURE 16. EQUINE ACTIVITY BY LOT SIZE (SOURCE: ALUI, 2012).

4.6 Farm Use of Small Lots

The agricultural use of small lots for farming is much higher in Chilliwack (Figure 17), compared to farming areas west of Chilliwack and in other parts of the province²⁸. In particular, nearly three quarters of lots between 2.5 and 10 acres are being farmed in Chilliwack (Table 1).

TABLE 1. PERCENT OF ALR LOTS BEING FARMED IN SEVERAL AGRICULTURAL MUNICIPALITIES (SOURCE: VARIOUS ALUIs).

Local Government	ALR lots between 2.5 and 10 acres
	% Farmed
Chilliwack	73%
Abbotsford	53%
Surrey	43%
Kelowna	39%
Langley	37%
Comox	22%

²⁸ ALUI reports from other farming areas in BC. Located at: <http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agricultural-land-and-environment/strengthening-farming/planning-for-agriculture/agricultural-land-use-inventories/south-coast> and <http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agricultural-land-and-environment/strengthening-farming/planning-for-agriculture/agricultural-land-use-inventories/vancouver-island>

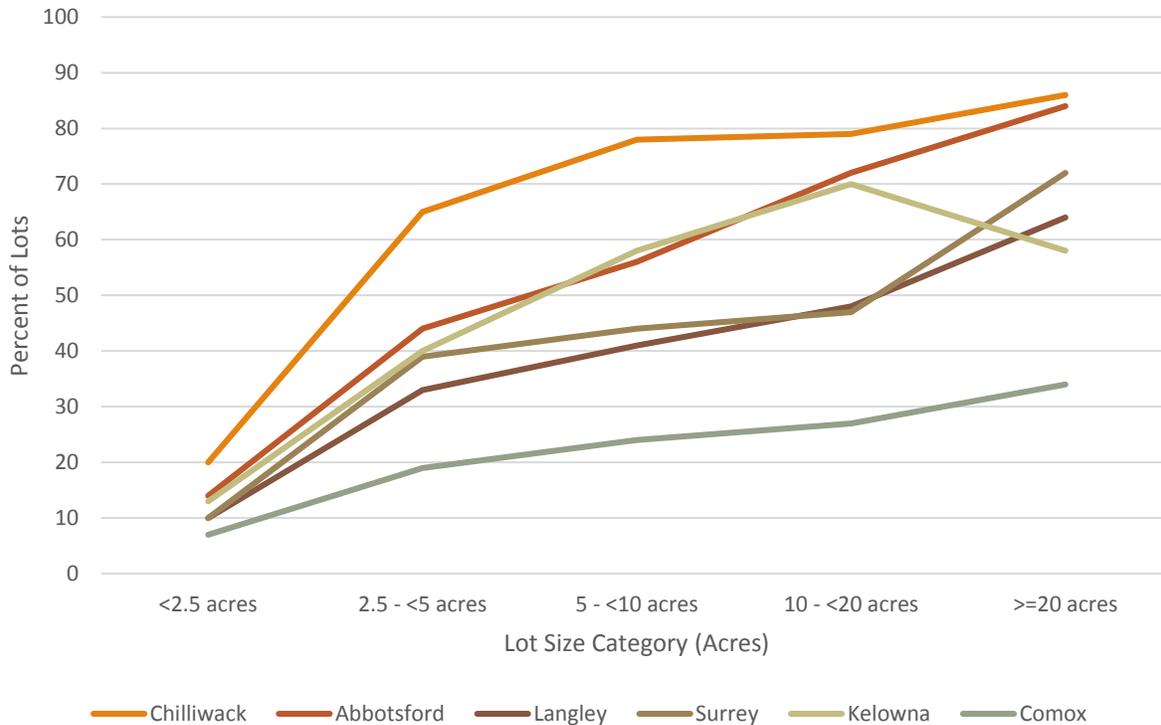


FIGURE 17. PERCENT OF LOTS WITH SOME FARMING ACTIVITY IN SELECT BC MUNICIPALITIES (SOURCE: VARIOUS ALUIs).

Figure 17 demonstrates that Chilliwack has a higher percentage of lots with farming activity in all lot size categories, compared with other farming municipalities. It is beyond the scope of this report to determine why Chilliwack has more parcels with farming activity. However, two possible areas for consideration are:

- Chilliwack has a large dairy sector that often leases farmland for forage production and manure application. This may lead to more 2 to 10 acre properties being leased to dairy farmers in Chilliwack than in other farming areas.
- Langley and Surrey do not have over 50% of their farm lots in production until lot sizes are over 20 acres. It is possible that urban pressures are greater in these local government areas, leading to higher rural residential use.

4.7 Non-farm Use of Small Lots

Non-farm uses can be non-farm businesses in the ALR that are operating as permitted or not permitted. Farms with value added activities such as direct farm sales, agri-tourism or on-farm processing are considered farm uses unless they grow to the point where they are bigger than the prescribed limits. Non-farm uses, in addition to residential use, appear attracted to smaller lots in the ALR within Chilliwack (Figure 18).

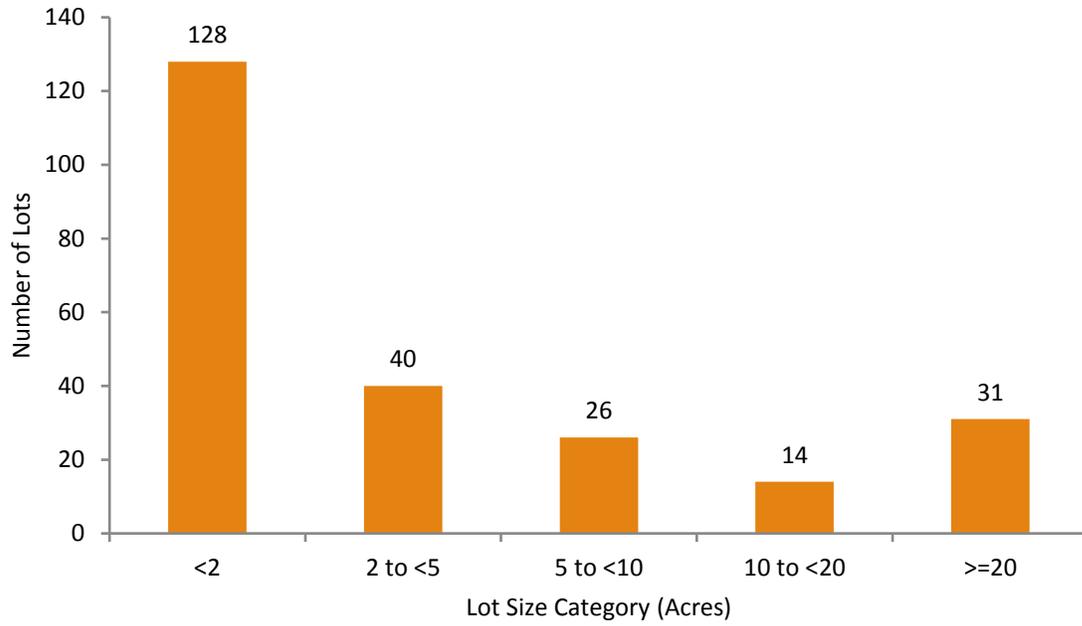


FIGURE 18. NON-FARM USES (BESIDES RESIDENTIAL) BY PARCEL SIZE CATEGORY IN CHILLIWACK ALR (SOURCE: ALUI, 2012).

Section 5: Agricultural Production Options on Small Lots

The discussion related to the role of small farm lots and agricultural production is grouped into four main themes:

1. Agricultural production efficiency of small farm lots;
2. The role of small farm lots in diversification of the local food supply and the local agriculture economy;
3. The role of direct farm marketing, often on smaller lots, in connecting the urban community with the farm community; and
4. The opportunity small farm lots present for new start-up farms.

5.1 Production Efficiency on Small Lots

One perspective is that small farm lots are inefficient because they cannot utilize the economies of scale required for single commodity, soil-based production. Another perspective is that small lots can better utilize labour and capital (infrastructure) to generate much higher revenues per acre than large lots. Both perspectives are correct, depending on the commodity and production system being used.

While there is no Canadian data that demonstrates the relationship between farm receipts and lot size or farm size, the American agricultural census data links farm receipts and farm size. Farms in the 4-acre size category would be made up of one or more small lots.

The general relationship between farm receipts and farm size is that, on average, annual farm receipts per acre increase as farm size decreases. This is because production systems that involve large inputs of labour and capital investment tend to locate on relatively smaller farms²⁹. Figure 19 illustrates the general relationship between farm size and revenue *per acre*³⁰. As the size of the farm increases, the per acre revenue decreases dramatically³¹.

²⁹ Small farms (which could be comprised of multiple lots) in terms of suitability for labour and capital intensive farm operations are less than 40 acres.

³⁰ Revenue Canada and Stats Canada do not regularly connect farm receipts to farm size. The USDA Census does. The graph represents an average over the last three census periods in the USA (2002, 2007, 2012). It is important to note that data represents all farms in the US. The USDA considers farms to be operations selling \$1,000 per year or more. Note that the X axis is not to scale and that the revenue per acre is much lower than in the Fraser Valley, by a factor of 10. The shape of the curve is expected to be similar in Canada.

³¹ According to the 2011 Canadian Census of Agriculture, there were 939 farms in Fraser Valley E, which is comprised of Chilliwack and Electoral Area E. 45% of those farms were under 10 acres in size. 55% (515 farms) were greater than 10 acres, and 94% of those farms were between 10 and 240 acres in size. <http://www5.statcan.gc.ca/cansim/a26>

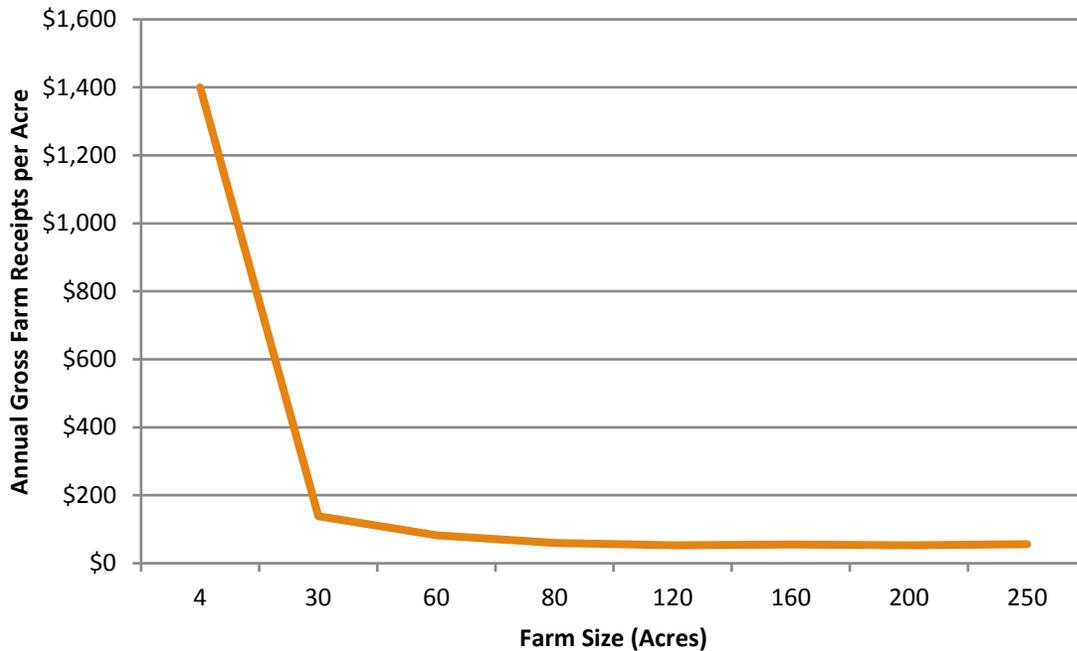


FIGURE 19. ANNUAL GROSS FARM RECEIPTS PER ACRE BY FARM SIZE IN THE USA (SOURCE: USDA CENSUS REPORTS).

This relationship holds in most agricultural areas around the world³². When labour and capital investment (buildings and equipment) are applied to small lots with good soils and available water, agricultural output can be very high. Compare this situation, from an agriculture production per acre perspective, to a larger scale farm with no access to irrigation. The agricultural output there is based on the quality of the soil, plant genetics and the precipitation available during the year. While more efficient equipment may enable a farmer to farm more land, it does not increase the agricultural output per acre. This is why the annual gross farm revenue per acre in Figure 19 “flattens out” as the larger farm size reaches 80+ acres.

5.2 Potential Revenue Range on Small Lots

The 1998 BC Ministry of Agriculture report on the *Role of Small Lot Agriculture in the South Coastal Region*³³ estimated the potential revenue from five-acre farm lots in 1998. Table 2 provides an update of that estimate.

³² Food First has produced several reports on this topic. See <http://foodfirst.org>

³³ Role of Small Lot Agriculture in the South Coastal Region, 1998. BC Ministry of Agriculture. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/800-series/825400-2_small_lot_agric_in_south_coastal_region.pdf

TABLE 2. POTENTIAL REVENUES FROM A FIVE-ACRE AGRICULTURAL LOT (SOURCE: BC MIN. OF AGRICULTURE, 1998, UPDATED).

Commodity ³⁴	\$/acre	% Used	Revenue / Four acres
Low Intensity Production			
Feeder steers (four animals @\$500)			\$2,000
Beef cow calf			\$2,250
Low intensity Sheep (6 ewes)			\$2,250
Dryland hay	\$600	100%	\$2,400
Forage Grass/Hay (irrigated)	\$1,240	100%	\$4,960
Layers (99 birds)			\$5,000
High intensity sheep			\$5,250
Annuals - field vegetables/turf	\$3,060	85%	\$10,404
High Intensity Production			
Broiler chickens			\$30,000
Blueberries	\$10,720	85%	\$36,448
Field Nursery/Tree	\$12,245	85%	\$41,633
Field floriculture	\$12,245	85%	\$41,633
Poly Greenhouse-vegetables	\$61,225	50%	\$122,450
Poly Greenhouse-flowers	\$61,225	50%	\$122,450
Container Nursery/Intensive vegetable	\$204,000	33%	\$269,280
Glass Greenhouse - vegetables	\$245,000	50%	\$490,000
Glass Greenhouse - flowers	\$285,000	50%	\$570,000
Broiler chickens (supply managed, 30,000 birds/barn)			\$540,000

Estimated revenues³⁵ for each commodity are an average for comparison purposes. Actual revenues can vary greatly, depending on farm management skills and practices.

Table 2 divides commodity types and production systems into ‘low’ intensity and ‘high’ intensity. Intensity captures the level of labour and capital invested in the farm operation. Low intensity production systems are divided into those that will not, on average, generate sufficient revenue per year to meet the requirements for farmland classification (tan shading) and to those that will (light green shading).

Understanding that the economic success of small farm lots depends on the commodity and production system used, helps to explain many of the different perceptions around small farm lots.

³⁴ Assumptions: residential footprint plus road allowances = 1 acre per lot; production area = 4 acres; livestock are estimated by animals per acre; crop values are adjusted to account for roadways and setbacks for intensive production; intensive vegetable (use of transplants/raised beds/etc.) is similar to a container nursery.

³⁵ Estimates of revenue per acre were taken from a recent study for the FVRD titled *Impacts of Freshet Flooding on Agriculture*. Calculations are available in Excel worksheet files.

Section 6: Conditions Required for Small Lot Viability

6.1 Opportunities for New Farm Start-ups

If a business owner is starting a new retail operation, he/she would check the space available for lease in the commercial areas. There would likely be several options to choose from.

For new start-up farms, the search for available space is more challenging. For secure access, land needs to be purchased. Large parcels are often too much land to tackle when starting a new farm operation. Small parcels are often more appropriate. Leasing land, if available, can also be an option.

In the Fraser Valley, the price of farmland is often cited as a barrier to new farmers. The price of a farm lot is a combination of the price of the residential component and the farming component. Most large farm lots in the Fraser Valley are purchased by farmers from other farmers. The price is typically driven by the profitability of the most profitable soil-based commodity. Farmers producing less profitable commodities will feel the price of farmland is too high.

For large farm lots, the residential component is a relatively small portion of the total price. For small farm lots, the price of the residential component is a major portion of the total price. If the residential component of the sales price of farm lots is subtracted from the total price, the balance of the sales price represents the price paid for the farmland.

The average price per acre of farmland³⁶ (excluding the residential component) for the different lot sizes is presented in Figure 20.

³⁶ The average price of the farmland portion of a lot in the ALR was estimated by subtracting the average sales price of a detached urban residence from the total price of the parcel, adjusting the price to 2015 prices with the food CPI, then averaging over all the lots sold in the lot size category. Data was analyzed from all transactions over the last 5 years for lots 2 acres and larger. Calculations are available in Excel worksheet files.

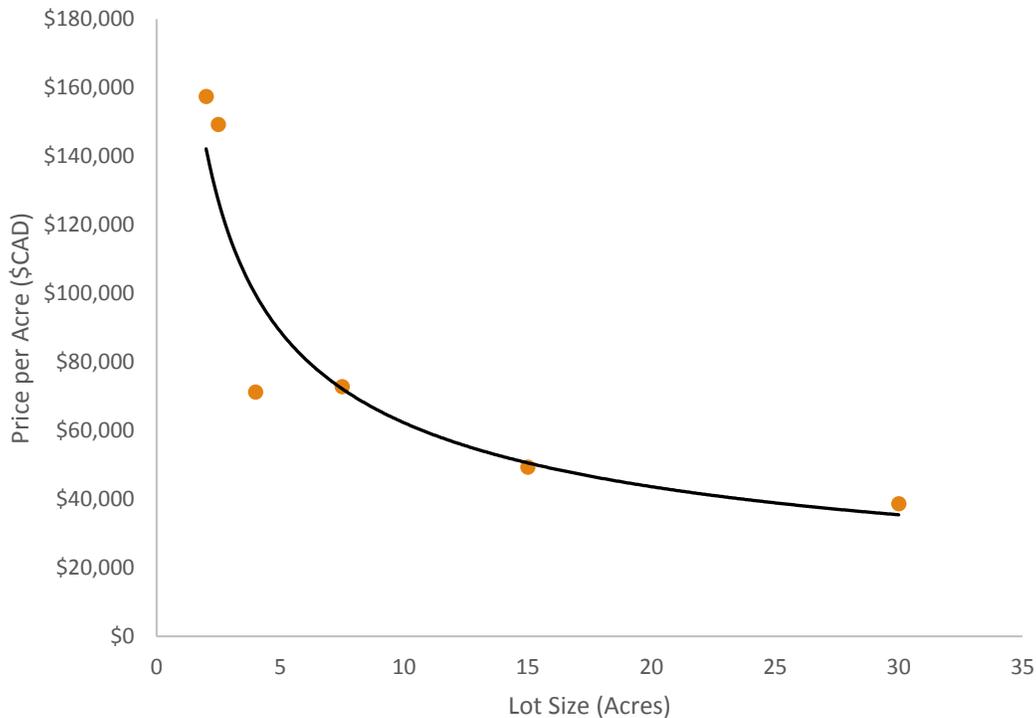


FIGURE 20. PRICE PER ACRE OF FARMLAND IN CHILLIWACK FOR DIFFERENT LOT SIZES (AT LEAST 2 ACRES IN SIZE) BETWEEN 2011 AND 2015 (EXCLUDING RESIDENTIAL COMPONENT). BLACK LINE REPRESENTS POWER TRENDLINE. (SOURCES: LANDCOR SALES DATA³⁷ AND CREA³⁸)

The price per acre of the farmland portion of small lots is higher than that of large lots. The potential farm receipts per acre is correspondingly higher and follows the potential farm receipts per acre (refer to Table 2). The information reflected in Figure 20 and Table 2 indicate why a farm business model that works for large lot sizes may not work for small lot sizes. For example, if a farm operator chooses to raise low intensity sheep on five acres, the cost of land will be too high from a farm business perspective. If another chooses to grow container nursery crops, then the price is more reasonable from a farm business perspective.

As an example, consider a 5-acre parcel that sells for \$900,000 (Table 3). The residential component is approximately \$500,000 of the total and the farmland (4 acres) is approximately \$400,000 of the total. The down payment needed for the farming portion is \$40,000. The annual mortgage payments on the balance of \$360,000 at a 3.5% mortgage over 25 years would be approximately \$21,600. (The monthly payment on a \$100,000 mortgage at 3.5% over 25 years would be approximately \$500/month.)

³⁷ Landcor Land Data Corporation. <https://www.landcor.com/>

³⁸ Canadian Real Estate Association (CREA). Average house price. <http://creastats.crea.ca/chil/>

TABLE 3. PROPORTION OF RESIDENTIAL AND FARMLAND MORTGAGE FOR A \$900,000 PROPERTY.

	Total	Residential Portion	Farmland Portion
Price of parcel	\$900,000	\$500,000	\$400,000
Down Payment (CMHC min.)	\$90,000	\$50,000	\$40,000
Annual Mortgage Payment	\$48,600	\$27,000	\$21,600

Table 2 shows the potential revenue from a 5-acre parcel. The annual revenues from low intensity production would not be sufficient to service the mortgage payment. The mortgage payment could be serviced by the high intensity production systems, especially container nursery and intensive vegetable production.

What may be a challenge for new farmers is having sufficient down payment to purchase the land. What a farmer chooses to grow and how well they sell it are the key factors. Similar to a retail store location, choosing the right product and being a successful merchandiser are the keys to being successful on a farm location. For small lots in the Fraser Valley, commodities or production systems that cannot generate substantial revenue per acre will not work - no matter how skilled the farmer is. A new farmer needs to do careful analysis and business planning to ensure they have the right mix of product and sales methods. They may also bring skills from their former career.

6.2 Farmland Tenure: Leasing

When an existing farm leases land to expand production, the lease represents a much lower cost to access land than buying more land. The option to lease land is important for several sectors such as dairy, intensive vegetable and nursery production (and in some cases berry production).

The lease rate for large parcels of farmland reflects their productive capacity. Lease rates for berry land are higher than lease rates for pasture or forage land. For small parcels, the lease rate is more connected to the benefits the land owner receives through farmland classification, rather than the land’s productive potential. Lease rates for small farm lots can be low, provided the lessee produces sufficient agricultural products to meet requirements for farmland classification of the land.

The challenge with farmland leases is that they are only secure for less than five years, unless the lease is registered on title. This limits the options for most production systems that require significant capital investment. Given the low cost, farmland leases on small lots are an excellent opportunity for existing farms to expand and new farms to start-up. Farmland leases are common in Chilliwack for all lot sizes greater than 2 acres. Table 4 shows the proportion of land area with Farm Class that is being leased by farmers, by lot size.

TABLE 4. PROPORTION OF LAND AREA WITH FARM CLASS THAT IS LEASED (SOURCE: BC ASSESSMENT, 2016).

Lot size (acres)	Area with Farm Class (acres)	Area with Farm Class that is leased (acres)	Percent of area with Farm Class that is leased
< 2	202	56	28%
2 – 10	5,109	2,184	43%
> 10	26,740	7,396	28%

Figure 21 presents the proportion of lots farmed that are leased by farmers in each lot size category. Once the size of the lot increases past 2 acres, the proportion of lots leased and the proportion of area leased is similar, suggesting that leasing is distributed fairly evening across lot size categories.

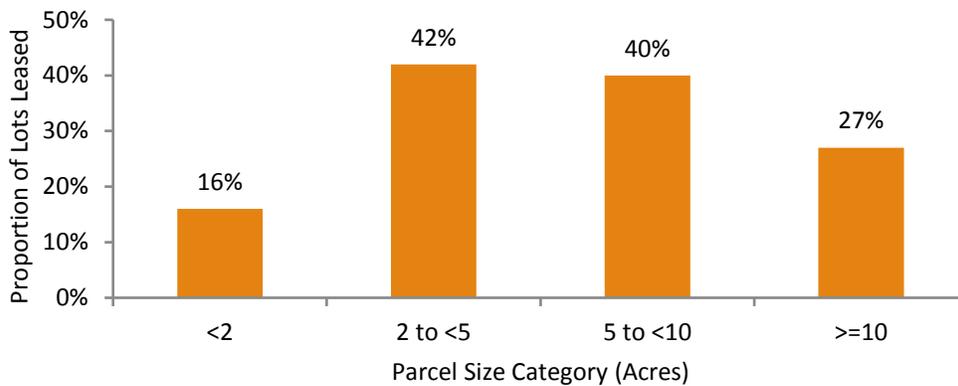


FIGURE 21. PROPORTION OF FARM LOTS THAT ARE LEASED PER PARCEL SIZE CATEGORY (SOURCE: BC ASSESSMENT, 2013).

Section 7: The Role and Impact of Small Lots on Farm Production in Chilliwack

7.1 Contribution of Small Farm Lots in Chilliwack

Small farm lots can be very productive, add to diversity in agriculture production, support smaller direct farm market operations, and provide opportunities for new farm start-ups. In Chilliwack, at least 80% of 2 to 10-acre lots have farming activity (Table 5).

As lot size increases within the ALR, the likelihood of the parcel to be actively farmed increases dramatically (Table 6). In fact, 65% of ALR parcels smaller than 2 acres are considered alienated (or not farmable) from agriculture, primarily due to the size of the lot. Of the small lots that are farmed, only 12-13% are considered to be farmed intensively (Table 6).

TABLE 5. SMALL LOT CONTRIBUTION TO FARMING IN CHILLIWACK (SOURCE: ALUI, 2012).

Type of Lots	Lot Size Category (Acres)				
	<2	2 -<5	5 – <10	10 – <20	>=20
Number of lots in the ALR	1,006	728	542	360	535
Number of lots in the ALR that are alienated from farming	656	36	30	23	32
Number of lots in the ALR that are available for farming	350	692	512	337	503
Number (%) of lots with some level of farming occurring ³⁹	167 (17%)	582 (80%)	467 (86%)	325 (90%)	490 (91%)

TABLE 6. SMALL LOT CONTRIBUTION TO INTENSIVE FARMING AND VALUE-ADDED ACTIVITIES IN CHILLIWACK (SOURCE: ALUI, 2012).

	Lot Description	Lot Size Category (Acres)				
		<2	2 -<5	5 – <10	>=10	Total
1	Number of lots in the ALR	1,006	728	542	895	3,171
2	Number (%) of lots in the ALR <i>and</i> with some level of farming occurring (subset of 1)	167	582	467	815	2,031
3	Number (%) of lots in the ALR with some level of farming <i>and</i> with intensive farming ⁴⁰ (subset of 2)	22 (13%)	70 (12%)	141 (30%)	336 (41%)	569 (28%)
4	Number (%) of lots in the ALR with some level of farming <i>and</i> with value added ⁴¹ activities noted (subset of 2)	5 (0.4%)	22 (3.0%)	11 (2.0%)	26 (2.9%)	64 (2.0%)

A contributing factor may be that some intensive small lot farms supply a niche market or direct market need in the community. This will limit the demand for these products, depending on the size of the community. As the community grows, the demand will increase.

The efficient production size scale for some intensive indoor production such as poultry, mushrooms and greenhouses has increased over time. New poultry, mushroom and greenhouse operations may look for larger parcels, e.g. 10 to 20 acres⁴², to accommodate future expansion. This is both because the efficient size has increased and because new production technology (such as tunnel ventilation in poultry barns and night lighting in some greenhouse production) has increased the potential for nuisance complaints.

7.2 Value Added Activities on Small Lots

Small farm parcels lack the economies of scale to produce agricultural products for the commodity (low price) markets. To be successful, small lot producers typically need to add value and sell locally. This often means producing different products than those that are produced on a large scale in the area. Small farm lots therefore tend to increase the diversity of products grown in the community.

³⁹ Refers to lot that had some farming activity as defined in the ALUI. This does not mean the whole lot was farmed but that farming was happening to a level sufficient to meet the definition requirements.

⁴⁰ Intensive farming refers to those activities identified as high-intensity production in Table 2.

⁴¹ Includes direct farm sales, agri-tourism and on-farm processing.

⁴² This is also because the marginal cost of the extra acre is relatively low.

Because small lots are well positioned (typically nearer the urban center) and sized for direct market sales, it is often assumed that direct farm marketing occurs more on small farm lots. Value-added activities can include retail activities (e.g. direct-to-the public retail farm stands, U-pick fields), agri-tourism activities (e.g. tours, picnic areas, petting zoos) or processing to increase value to agricultural products (e.g. turning berries into jam, extracting and putting honey into jars). Value-added activities can be a means to capturing more of the profit margin on agricultural products, since the middle man (e.g. a wholesaler or commercial retailer) is eliminated. These types of activities can also be a means of creating an interface with the public and the agricultural community, by putting a face and a name to the farmer who produced the goods.

There were three published sources of information available on value-added activities in Chilliwack in 2012. The first was the 2012 ALUI produced by the Ministry of Agriculture⁴³. The other two are publications that producers must pay an annual fee to be listed in – the 2012 Chilliwack Circle Farm Tour⁴⁴ (which is specific to Chilliwack) and the 2012/2013 BC FarmFresh Guide⁴⁵ (which lists farms throughout the Lower Mainland). The latter two sources tend to include farms that actively market their products to the public. It is important to note that for all three sources, the lot size of the home lot where the value-added activities were advertised was used as the lot size in the following tables and analysis. It was possible that the farms operated on more than one lot. Several of the lots had more than one type of activity.

Figure 22 outlines the value-added activities noted in the 2012 ALUI. A total of 76 activities were noted on 64 lots. Lots greater than or equal to 10-acres had the highest percentage of activities (41%) of any of the lot size categories, followed by lots that were 2-acres to less than 5-acres (33%).

⁴³ Located at: http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/land-use-inventories/chilliwack2012_aluireport.pdf

⁴⁴ The current version of the Chilliwack Farm Tour is located at: <http://circlefarmtour.com/chilliwack>

⁴⁵ The current version of the BC FarmFresh Guide is located at: <http://www.bcfarmfresh.com/>

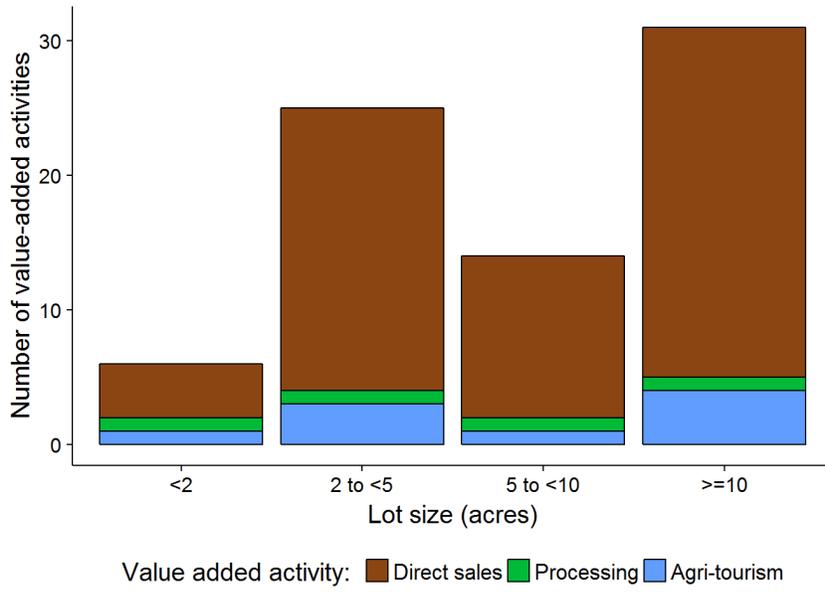


FIGURE 22. VALUE ADDED AGRICULTURAL ACTIVITIES (SOURCE: ALUI, 2012).

The Circle Farm Tour and Farm Fresh Guide listings for 2012 were combined, and once duplicate listings and non-ALR located businesses were eliminated, the properties listed had a total of 31 value-added activities on 18 lots (Figure 23). Parallel to the ALUI findings, lots greater than 10-acres had the highest percentage of activities (42%) of any of the lot size categories, followed by lots that were 5-acres to less than 10-acres (23%). It should be noted that the only lot in the less than 2-acre lot size category was actually in the Agriculture Commercial zone (in the ALR), but was not a farm.

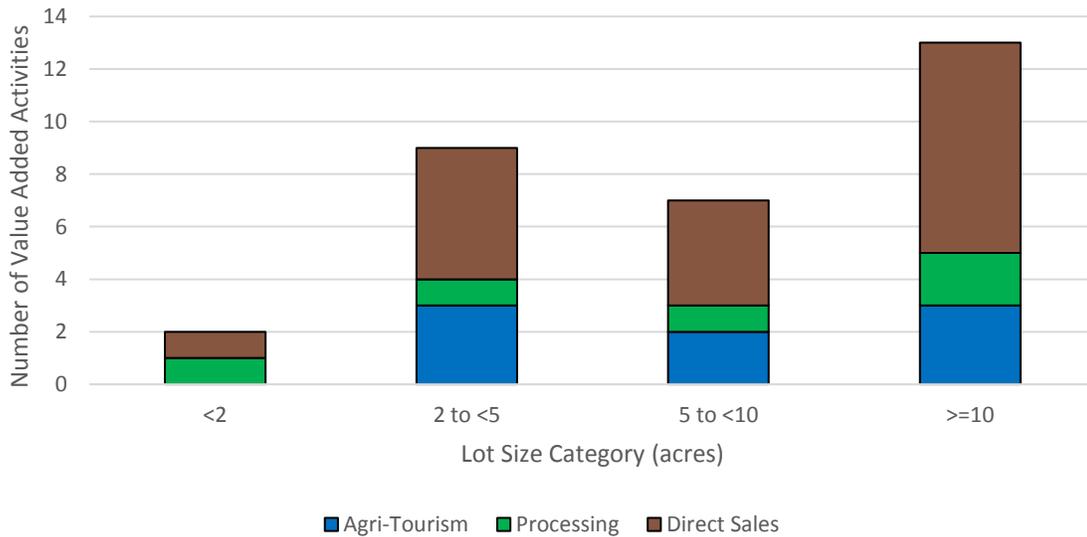


FIGURE 23. VALUE ADDED AGRICULTURAL ACTIVITIES (SOURCES: CIRCLE FARM TOUR MAP AND FARM FRESH GUIDE, 2012).

7.3 Lot Size and Farm Practice Complaints

Under the *Farm Practices Protection Act*, the BC Ministry of Agriculture responds to complaints about nuisance issues on farms, and keeps an internal database of complaints handled, categorized by local government. The Regional Agrologist for Chilliwack reviewed the database records since 2001, and provided a summary⁴⁶. The summary had all personal information removed to protect privacy. The summary included the year, the type of complaint, the lot size of the complainant (unknown; residential outside of the ALR; or in the ALR and categorized by less than 5, less than 10 or greater than 10 acres), whether the complainant was a farmer, the main type of commodity produced by the respondent farm, and the lot size of the respondent farm. There was no data available for the years 2003, 2005, 2007, 2008 or 2009.

Out of the 11 years with data available, there were a total of 58 complaints received. The majority of complaints (42 complaints or 72%) were about farms that were larger than 10 acres. This is not surprising, as larger scale farms are more likely to generate nuisance issues like dust, odour or noise. Only eight of the complaints (17%) were against farms that were smaller than 10 acres (one of which was outside of the ALR). In a further 8 complaints (17%), the farm lot size could not be identified.

The largest subgroup of complainants (25 complainants or 43%) lived on residential lots outside of the ALR. This points to a potential need to consider further edge planning initiatives in Chilliwack to reduce the potential for urban/rural conflict. Ten complainants lived on a lot of unknown size and/or location.

In total, 74% (17 complainants out of 23) of the complainants that originated in the ALR came from small lot owners, most of whom were not farmers. The types of complaints from small lot owners followed a similar pattern to the complaints received overall. The main types of farm practices complained about by small lot owners were in order: odour (6 complaints), mortality disposal (4), noise (4), pesticide use (2), dust (1), and pollution (1). By comparison, when looking at all 58 complaints, the complaints were, in order: odour (28), noise (11), mortality disposal (5), pesticide use (5), pests (3), pollution (3), dust (2) and safety (1).

7.4 Optimal Lot Size and the Long-Term Impacts of Subdivision of Farm Parcels

A common question from local government planners is what is the optimum farm lot size? Other governments, including those of Lambton County, Ontario, and New South Wales, Australia, have conducted several studies in an effort to identify the proper minimum lot size for farming⁴⁷. These studies attempted to determine how many 100-acre lots could be split into 50-acre lots. However, a definitive answer to this question has not been found.

The Fraser Valley can produce a wide variety of products and production technology continues to improve⁴⁸. For example, the minimum economically viable size for blueberry production 20 years ago may have been 10 to 15 acres but as machine harvesting has improved, the economic scale has increased as the capacity of a

⁴⁶C. Zabek, July 29, 2016, personal communication.

⁴⁷ Infosheet: Lot creation in prime agricultural areas. Ontario Ministry of Municipal Affairs and Housing, Provincial Planning Policy Branch, 2007. <http://www.mah.gov.on.ca/AssetFactory.aspx?did=4712> ; County of Lambton Official Plan Update. Supplement to background report No. 4. Minimum lot areas for agricultural uses. September 2015; http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0004/189733/minimum-lot-size-methodology.pdf; Minimum lot size framework. Department of Primary Industries, Government of New South Wales, Australia. Accessed 2016. http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0004/189733/minimum-lot-size-methodology.pdf

⁴⁸ The Fraser Valley was initially set up in a 1 mile grid so lots tend to be a portion of 640 acres in a square mile. Farm lot sizes are typically 80, 40, 20, 10, 5, 2.5 acres minus allowances for roads.

machine harvesters increased. Broiler farms that once had 30,000 birds per barn were well suited to 5 acre parcels. Now barns have 60,000 birds, and 10 to 15-acre lots are more appropriate.

In order to examine the long-term impacts of farmland subdivision, the BC Ministry of Agriculture undertook two studies to identify the impact of creating small lots on agricultural production. One 2009 study⁴⁹ examined the impact on agricultural production per acre of subdivisions in the Township of Langley that occurred before the creation of the ALR⁵⁰. The second study (2007) examined the results of ALC decisions to subdivide existing ALR lots on future agriculture production in the Comox Valley⁵¹.

The subdivisions examined in Langley occurred almost 60 years ago, so the results can be considered to be the long-term impacts of subdivision in a farming area. The Comox Valley study looked at the impact of more recent subdivision activity, so the results can be considered to be an indication of the short-term impact of subdivision in a farming area.

7.4.1 Subdivision in the Township of Langley

The BC Ministry of Agriculture and Lands investigated the long-term impact of subdivisions in the Township Langley in 2009 (see Section 3.4 for more information). In the 1960s, an 80-acre parcel on 264 St. in Langley was subdivided into sixteen 5 acre parcels. A new street, 13th Ave, was created as an access road for the lots. The resulting lots (after loss of land for the road allowance) were approximately 4.6 acres each.

The 2009 study provided an estimate of the annual agricultural output (production value) per acre in the subdivided areas and compared those figures to those in adjacent larger lots, so that soil and climate factors would be similar. The results (Table 7) indicate a far lower level of agricultural economic output on the smaller lots in 2009, suggesting that intensive farming was not encouraged by subdivision. In fact, the average agricultural production on the small lots, on a per acre basis, was 2% of the average production of the larger lots surrounding the subdivision.

TABLE 7. ESTIMATED PRODUCTION VALUE (2009 LEVELS) OF SUBDIVIDED FARMLAND IN THE TOWNSHIP OF LANGLEY (SOURCE: BC MINISTRY OF AGRICULTURE AND LANDS, 2009).

Example Subdivisions	# Lots analyzed	% Lots Farmed	% of Land Farmed	Estimated Annual \$ Output /Acre
Small lots (2 – 4.9 acres)	46	13%	13%	\$ 173
Larger lots (7 – 110 acres)	29	80%	95%	\$ 8,183

These estimated production figures were updated in 2016 for one of the subdivided areas (Table 8).

⁴⁹ The redacted version of the study is available at: http://docs.openinfo.gov.bc.ca/Response_Package_2_AGR-2016-63087.pdf

⁵⁰ The minimum lot size in all of the Township of Langley was 5 acres up until 1992, when large sections of the ALR were changed to 20-acre minimum lot size.

⁵¹ Located at: http://docs.openinfo.gov.bc.ca/Response_Package_AGR-2016-63038.pdf

TABLE 8. ESTIMATED PRODUCTION VALUE (2016 LEVELS) OF SUBDIVIDED FARMLAND IN THE TOWNSHIP OF LANGLEY (SOURCE: TOWNSHIP OF LANGLEY GEOSOURCE MAP, 2016).

Example Subdivisions	# Lots analyzed	% Lots Farmed	% of Land Farmed	Estimated Annual \$ Output /Acre
Small lots (4.6 acres)	16	6%	6%	\$ 110
Larger lots (7 – 40 acres)	10	90%	98%	\$ 11,450

In 2009, only 2 of the 16 small lots had retained farmland classification for tax purposes. In 2016 there was only one small lot with farmland classification – a horse farm (Table 9). The surrounding non-subdivided farmland includes a large vegetable greenhouse, a dairy farm and several blueberry farms. The amount of land in blueberry production in the vicinity has increased since 2009. The current uses of those 16 small lots are listed in Table 9.

TABLE 9. CURRENT LAND USE ON 16 SMALL LOTS THAT WERE SUBDIVIDED FROM AN 80-ACRE LOT, TOWNSHIP OF LANGLEY (SOURCE: BC MINISTRY OF AGRICULTURE, 2009⁵² AND UPDATED IN 2016).

Land Use	Number of Lots
Residential only	11
Non-farm use	3
Farm	1
Vacant	1
Total	16

7.4.2 Subdivision in the Comox Valley

In 2007, the BC Ministry of Agriculture and Lands investigated the short-term impacts of subdivision in the Comox Valley (see Section 3.4 for an overview). This Comox Valley study investigated two aspects of subdivision in the ALR in 2007⁵³:

1. The process for application and the relationship between the three key decision makers – the AAC, the local government and the Agriculture Land Commission.⁵⁴
2. The impact on agriculture production of decisions to accept a subdivision application or decline a subdivision application.

The study followed the impact of subdivision decisions over a 5-year period following the decision. In terms of the short-term impact of subdivision approval on the area of land in agriculture production they found that the total number of hectares in agricultural use dropped from 82 hectares to 73 hectares, or a 10.5% decrease in the amount of land in production.

⁵² Agricultural activity on small agriculture lots in the Fraser Valley created by subdivision and long term planning initiatives. Examples in the Township of Langley. BC Ministry of Agriculture and Lands, 2009. A redacted version of this report is available at:

http://docs.openinfo.gov.bc.ca/Response_Package_AGR-2016-63087.pdf

⁵³ Land Use Activity and Parcel Size in the ALR, 2007. BC Ministry of Agriculture and Lands. Located at:

http://docs.openinfo.gov.bc.ca/Response_Package_AGR-2016-63038.pdf

⁵⁴ This part of the Comox Valley report may be of interest to AAC and CAC members, but further comment is not in the scope of this report.

In terms of parcels in production they looked at the status in 2007 of both accepted and denied subdivision applications from 1990 to 2007 (Table 10).

TABLE 10. CHANGE IN AGRICULTURAL USE IN AGRICULTURAL PARCELS WITH SUBDIVISION APPLICATIONS IN COMOX, BC BETWEEN 1990 AND 2007 (SOURCE: BC MINISTRY OF AGRICULTURE, 2007).

	Decision	
	Refused	Approved
Total number of parcels	39	65
Parcels with agriculture at time of production	16	35
Parcels lost to agriculture since application	-1	- 16
Parcels that gained new agriculture since application	+12	+6
Parcels with agriculture in 2007	27	25
Percent change in agricultural use since application	+69%	-29%

Therefore, in the Comox Valley between 1990 and 2007, decisions to approve subdivision applications resulted in a decrease in agricultural production, and decisions to deny subdivision applications resulted in an increase in agricultural production. With regards to why more parcels came into production after a denial; no evidence was given as to whether the landowner started farming, sold the farm or leased it to a farmer.

7.5 Impact of Additional Residential Uses

The economic impact of agriculture is driven by the amount of land available for production and the intensity of production on that land. When a smaller lot is created it also creates a potential new residential building site. This new building site typically removes 1 acre of farmland from being farmable, and increases the collective value of the lot by the prevailing price of a residential building lot.

Consider the pre-ALR subdivision in Langley detailed in Section 7.4.1, where an 80-acre parcel was divided into sixteen 5-acre parcels. If the typical residential footprint is 1 acre, the subdivision removed 15 acres of productive farmland.⁵⁵ From a broad perspective, adding a new residential site (building a house in the ALR) in Chilliwack reduces annual farm receipts by an average of \$10,000 and has an overall negative economic impact on the community of a loss of \$20,000.⁵⁶

There are existing and potential new policies that may require greater setbacks for farm activities. At present, there is one normal farm practice standard that requires setbacks to neighbouring residences. The “South Coastal BC Wildlife Damage Control” Farm Practice Sheet⁵⁷ has 200 metre setbacks for Category A devices (e.g. propane cannons) and 100 metre setbacks for Category B devices (e.g. bird distress calls broadcast through speakers). The proposed changes to BC’s “Open Burning Smoke Control Regulation⁵⁸” suggest setbacks distances to all residences (not just neighbouring residences) of between 50 to 500 metres,

⁵⁵ 16 residences minus the residence that would have existed on the 80-acre parcel.

⁵⁶ The average farm gate receipts / acre in Chilliwack is \$10,000. See footnote 61 for the calculation. A residence in the rural area seldom removes less than an acre from the productive land base. Farm gate receipts in a community lead to other spending within the community. The rule of thumb for this multiplier effect for agriculture is 2.

⁵⁷ Located at: http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/farm-practices/870218-59_wildlife_damage_south_bc.pdf

⁵⁸ Located at: http://www.env.gov.bc.ca/epd/codes/open_burning/pdf/obscr_information_update_2016_06.pdf

depending on the burn conditions. At the federal level, the Pest Management Regulatory Agency has considered whether a specific class of pesticide labels should contain setbacks to residences.⁵⁹ Each additional residence added to the ALR has the potential to curtail adjacent farming practices through the application of setbacks. If an ALR application has the potential to add a new residence, the potential setbacks impacting farm activities on both the parcel(s) under application and the adjacent parcels, can have a negative impact on economic development in the ALR⁶⁰.

Sufficient land for nuisance mitigation and new setback requirements is an important consideration when selecting an appropriately sized lot for a specific production system. This may encourage some intensive production systems to seek larger farm lots. This impact could be mitigated through the regulation of homeplates and home setbacks.

7.6 Economic Development Rationale for Small Lots

The average farm revenue per acre in Chilliwack is approximately \$10,000/ac⁶¹. Small lots, if intensively farmed can average \$25,000/ac⁶². When would four 5-acre farm parcels produce more economic activity in the community than one 20-acre parcel? A 20-acre parcel could produce an average of \$190,000/yr.⁶³ in farm revenue, where a 5-acre parcel, intensively farmed to the full capacity of the lot, could generate on average \$100,000/yr. To generate more than \$190,000/yr., at least two of the 5-acre lots would have to be intensively farmed to the full capacity of the lot.

As a general rule of thumb, for small agriculture lots to produce more of an economic development benefit than larger lots, at least 50% need to be intensively farmed to the full capacity of the lot.

Currently only 20% of the lots in Chilliwack in the 2 to 10-acre size category are intensively farmed, and not all of those small lots that are intensively farmed are farmed to the full capacity of the lot.

A vacancy rate is often used as a measure of whether there is sufficient available space for growth in residential, industrial and commercial areas. For the agriculture sector the vacancy rate can be expressed as a percentage of the total number of lot available for farming as follows:

$$\text{Vacancy rate} = (\# \text{lots available for farming with no farming activity} / \text{Total number of lots available for farming}) \times 100$$

In the industrial and commercial zones, vacant space is usually available for sale or lease. With farmland in the ALR, the unused farmland is often not available and is being held for other uses. There is no data available to determine what proportion of the unused farmland in Chilliwack is available to lease or buy. When vacancy rates in commercial and industrial areas drop below 5%⁶⁴ there is often a concern that the

⁵⁹ M. Waring, personal communication, November 9, 2016.

⁶⁰ See Recommendation #2 in Section 9 of this report.

⁶¹ \$359,509,811 in total annual sales from Census Data Area E and 36,679 acres of total area available for farming from the City of Chilliwack ALUI. The two areas are not identical. Area E sales are often used to describe farming activity in Chilliwack because the area beyond the City of Chilliwack, that is included in Area E, has relatively little farming activity. In the absence of a more precise breakdown in area and farm activity, these numbers are the best estimate.

⁶² From Table 2, an approximate median revenue for intensive production on a 5-acre parcel would be \$25,000/acre.

⁶³ 19 acres X \$10,000 = \$190,000.

⁶⁴ <http://www.vancouversun.com/business/Shortage+industrial+land+stifling+growth+report+shows/11084289/story.html>

amount and variety of space available will limit growth in those sectors. The vacancy rates for farmland in Chilliwack, by lot size are represented in Figure 24.

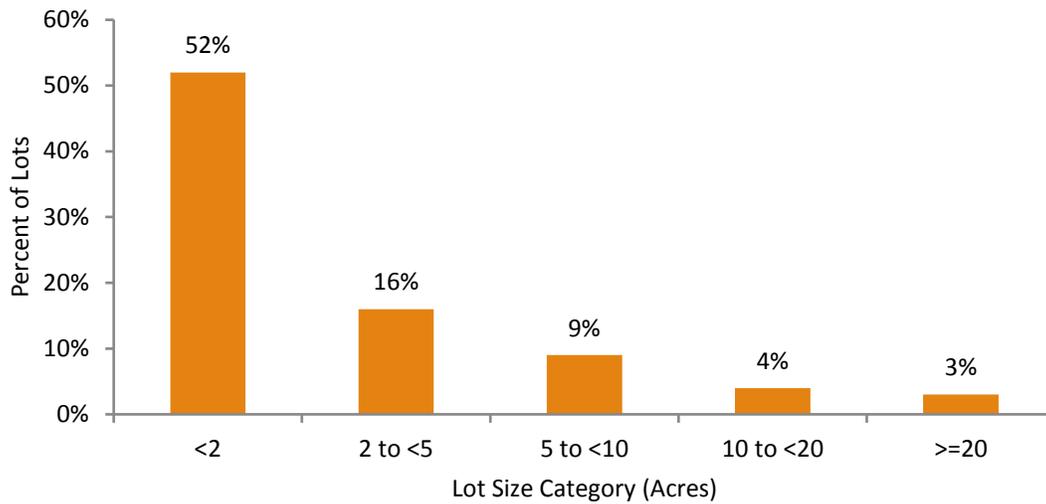


FIGURE 24. VACANCY RATES OF AGRICULTURAL LOTS BY PARCEL SIZE IN CHILLIWACK (SOURCE: ALUI, 2012).

Based on Figure 24, there is effectively no unused farmland on parcels over 10 acres in size that are available to support future agricultural growth. Growth can only come through producing more per acre on the existing land base on those large parcels. While the discussion on subdivision or lot line adjustment tends to focus on the small lot produced, the creation of a small lot comes at the expense of a larger lot. Every subdivision or lot line adjustment reduces the inventory of larger lots. With the vacancy rate of small agriculture lots (2 – 5 acres) at 16%, and a 3-4% vacancy rate for larger agriculture lots (> 10 acres), there is no agricultural business case, nor economic development case, for creating additional smaller lots.

7.7 Production Opportunities on Small Lots

One of the strengths of agriculture in the Fraser Valley is its diversity. Farmers can change crops and production systems to meet changing markets. However, not all commodities and production systems will work effectively on small lots. Too many small lots limit the flexibility of the agriculture sector to respond to future markets and production technology. Many of the large farms that exist today started as small farms, which can be well-suited for new farm start-ups. It is important to have a supply of small farm lots for new start-ups to purchase or lease. Currently there are 155 lots between 2 - 10 acres in size available for farming, and 838 lots between 2 and 10 acres in size with low intensity farm operations. Therefore, there is an ample existing supply of small farm lots in Chilliwack for new farm start-ups.

Metro Vancouver, in a long-term planning exercise⁶⁵, identified unused farmland as a barrier to development of the agriculture sector. They engaged Ipsos Reid to interview landowners in the ALR that did not farm their

⁶⁵ Metro Vancouver 2040: Shaping Our Future. Located at: <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/RGSAdoptedbyGVRDBBoard.pdf>

land or make it available for others to farm⁶⁶. The study found that many landowners had no interest in farming – they simply wanted to use the land for residential use. Those that had some interest were unwilling to invest the capital or labour needed to farm the land. Permitted non-farm uses in the ALR, particularly residential uses, take land out of production and make it unavailable for farmers wishing to expand their farm business or start new farms.

Since a significant percentage of smaller lots (less than 5 acres) in Chilliwack are used for residential uses (see Figures 4 and 5), creating more small lots through any type of ALR application process will encourage more non-farmers to move into the ALR for their own personal residences, and leave the land unfarmed.

7.8 Social Benefit Rationale for Small Lots

A Fraser Basin Council study⁶⁷ estimated the public amenity benefits of farmland to a community. Having a local source of food production was identified as the key benefit, followed by environmental stewardship, green space and cultural heritage. In focus group discussions with respondents, participants frequently mentioned the value of being able to buy direct from local farms and getting to know the people that grow their food. No evidence was found that small lots were better at delivering these public amenity benefits valued by the community. Table 2 estimated the farm receipts from 5-acre lots for different commodities and different production systems. Looking at the table from a large-scale agriculture/economic development perspective, the dark green production systems are considered “bona fide” farming and the light green and tan production systems are seen as not real farming. Looking at the table from a public amenity benefit perspective, the light green and tan production systems are delivering the social benefits the community desires, while the dark green are seen as more industrial activities. From an economic development perspective, any type of farm production is better than no production. Some small farms grow and become large farms. Landowners that are engaged in some level of agricultural production will likely have a better understanding of production systems on other farms, and this understanding will lead to fewer farm practice complaints.

Small farm lots that are not farmed can have negative impacts on the farm community. As demonstrated in section 7.3, rural non-farming residents who are unfamiliar with - or unwilling to accept - normal farm practices of neighbour farms, may initiate farm practice complaints that are very stressful and time consuming for operating farms.

⁶⁶ Located at: <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/ALR-LandownerSurveyReportJan2013.pdf>

⁶⁷ Located at: http://www.fraserbasin.bc.ca/Library/FVR/fvr_public_amentity_benefits_of_farmland_report_2009.pdf

Section 8: Summary of Findings

This investigation has identified several findings that may help decision makers in Chilliwack evaluate boundary adjustment and subdivision applications. The conclusions listed below are grouped by category and a set of specific recommendations are provided in Section 9:

A) The status of agriculture on small lots in Chilliwack:

- While nearly 3/4 of the lots in Chilliwack's ALR are less than 10 acres in size, they make up less than 20% of the total area of the ALR. In fact, the 1,006 lots that are less than 2 acres of size only have a cumulative total of farmed area of 153 acres.
- Over 80% of the lots that are less than 2 acres in size are assessed as residential only, and nearly 40% of lots between 2 and 5 acres are assessed as residential only by BC Assessment.
- In addition to residential uses, small lots that are less than 2 acres in size have the highest number of lots with other types of non-farm uses (e.g. commercial, institutional, etc.).
- Less than 1% of the each of the forage, nursery, berry and vegetable cropland is located on lots that are less than 2 acres in size. Only 16% of nursery crop production, 8% of vegetable production, and 5% of berry production is occurring on parcels that are 10 acres or less in size.
- Small scale livestock operations are concentrated on the lots that are less than 10 acres in size.
- Contrary to what may be expected, the most intensive agricultural operations in Chilliwack are not located on the smaller lots.

B) The types of agriculture most suited to small lots:

- A large variety of agricultural commodities - from livestock to field crops to intensive non-soil based farming - are all potentially suited to small lots.
- The potential revenue on a 5-acre lot (with residential uses covering 1 acre) ranges from \$2,000 to \$540,000 depending on the type of commodity produced and the intensity of the production.
- While a range of commodities are potentially able to be produced on lots less than 10 acres in size, for economies of scale and reduction of farm practice complaint reasons, most of Chilliwack's medium and large-scale livestock (especially dairy and swine), and most of Chilliwack's forage, nursery, berry and vegetable production chooses to locate on large lots.
- A long-term study in the Township of Langley indicated that subdivision of a large agricultural lot in to several small lots resulted in only one lot being farmed over the long term. This points to the likelihood of the eventual residential use of small farm lots.

C) The minimum lot size and other conditions required for viable farm activity on small lots:

- There is no "magic bullet" in terms of a minimum lot size that will guarantee agricultural viability.
- The real estate market price of farmland per acre is approximately 2 to 4 times higher on lots smaller than 10 acres than on lots greater than 10 acres, which presents challenges to farming small lots with economic efficiency unless intensive agricultural practices are followed.
- From an economic development perspective, 50% of small farm lots must be intensively farmed, to the full capacity of the lot, before any additional small lots are needed. Chilliwack's current small lot farm land use is significantly below this threshold (only 20% of the lots in the 2 to 10-acre size category are intensively farmed and not all of those small lots that are intensively farmed are farmed to the full capacity of the lot).

- Limiting the area of small lots that is available for residential development and other types of non-farm uses would increase the area available for farming.

D) Conclusions regarding the role of small lots in Chilliwack's ALR, and the extent to which they contribute to or detract from Chilliwack's agriculture industry:

- On average, every new residence in the ALR reduces annual farm receipts by \$10,000, and correspondingly reduces the economic impact in the community by \$20,000. The majority of the residences in Chilliwack's ALR are located on small lots.
- Small lot owners are the source of the majority of complaints about farm practices that originate from ALR landowners.
- Both large and small lots in Chilliwack's ALR engage in value-added activities.
- The vacancy rate of small lots is very high for very small agricultural lots in Chilliwack (52% for lots less than 2 acres) and ample for small lots (16% for lots 2 – <5 acres; and 9% for lots 5 - <10 acres). Farmland lots over 10 acres in size in Chilliwack are effectively fully utilized with a vacancy rate of only 3-4%.
- The average price per acre of farmland increases as lot size decreases. As lot size decreases, more intensive production systems are needed for farm businesses to be financially successful.

The data analyzed in this report has definitively shown that there is very little farming activity currently occurring on small lots in Chilliwack's ALR. There is no economic development rationale for Chilliwack to create more small lots through subdivision and/or boundary adjustment.

Section 9: Conclusions and Recommendations

The inventory of large ALR lots (> 10 acres) in Chilliwack indicates that they are effectively fully utilized for agriculture. There are many small lots (< 10 acres) that are not in production, and many of the small lots that are in being used for farming are not being fully utilized (i.e. they are used for low intensity production). It is difficult to conclude, based on either agricultural production or economic development arguments, that an increase in the inventory of small lots is warranted at the expense of large lots.

Small agricultural lots can be highly productive if the requisite labour and capital inputs are provided. This use of labour and capital is the reason that, in general, as farm size decreases the farm receipts per acre increase. Farm operators that use intensive production systems look for lots that meet their needs. For example, a greenhouse producer that needs 20 acres will not purchase 100 acres, and a poultry farmer who needs 5 acres will not purchase 30 acres. This report has demonstrated that larger lots in Chilliwack are more intensively farmed than smaller lots, which is opposite to the general trend. Agricultural activity on small lots, at this time, is predominantly characterized by low intensity forage, pasture, and small scale livestock production. Since there are many unused small lots in Chilliwack's ALR currently, the supply exceeds the demand.

A District of Kent-Agassiz small lot agriculture study⁶⁸ provided some insight as to why small farm lots are not well utilized, and what leads some owners of farmland to being compelled to subdivide or make boundary adjustments. The results of the Kent study were reinforced by an Ipsos Reid survey for Metro Vancouver in 2012⁶⁹. The four key reasons are:

- 1) They have no interest;
- 2) They feel the land is not suitable;
- 3) They are not prepared to invest the labour and capital; or
- 4) They lack agricultural knowledge.

The 2007 Comox-Strathcona Regional District project report⁷⁰ provided an additional reason why landowners request a subdivision: They want to divide the lot for personal reasons (e.g. estate development).

As an analogy, it is worthwhile comparing agricultural endeavours to other commercial activities. For instance, if a store in Cottonwood Mall closed, the general perception would be that the owner sold the wrong product or was not a good business operator. Over time, a new retailer would likely move into the space, and if the business owner sold what the market wanted and managed the store well, the business would be successful.

Similarly, if farmland was viewed as a large agriculture production zone, and unused or underutilized lots were viewed as production units waiting to be used for the production of what the market demanded, any

⁶⁸ Kent Agricultural Advisory Committee, 2004. Small lot agriculture in the District of Kent, BC.

http://www.fraserbasin.bc.ca/Library/FVR/report_fvr_small_lot_ag_2004.pdf

⁶⁹ ALR Landowner Survey, 2013. <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/ALR-LandownerSurveyReportJan2013.pdf>

⁷⁰ Land Use Activity and Parcel Size in the ALR: A Pilot Study in Comox-Strathcona Regional District, 2007. http://docs.openinfo.gov.bc.ca/Response_Package_AGR-2016-63038.pdf

request to jeopardize the business' potential success by subdividing the lots based on the above reasons (e.g. the business owner (landowner) having no interest in farming; feeling that the land is unsuitable; being unprepared to invest in the business (farm); lacking agricultural knowledge; or having other personal reasons/goals that would impede the business's potential success), would not be well received.

There is no economic development rationale for creating additional small lots within Chilliwack's ALR, especially when at least one of the additional small lots may only be used for residential purposes. Therefore, it is recommended that the City of Chilliwack "raise the bar" significantly in terms of the requirements for subdivision and boundary adjustment applications by adopting the recommendations set forth below. These recommendations are presented under the headings of: recommendations for boundary adjustment applications; alternatives to the use of boundary adjustments for farm family planning; recommendations for future planning initiatives in Chilliwack; and a recommendation regarding support for potential changes to BC Assessment processes.

9.1 Recommendations for Boundary Adjustment Applications

9.1.1 Boundary Adjustment Applications and Long-Term Agricultural Growth and Development in the ALR

In urban areas, adjustments to lot alignment and zoning changes usually result in the increased market value of the properties involved. This is broadly termed "land development" and is viewed as a positive situation for the landowner involved, and for the community. Higher land values mean more business potential and more tax revenue.

The ALR, established in 1973, changed the approach to growth and development in the areas set aside (zoned) for farming. The shift was from the current "land development" approach in the urban areas, to an agricultural development approach. With farmland, smaller lots and higher land values mean less agriculture potential. Decisions on applications to the ALC for changes in the ALR are based on how the change will help the long-term growth and development of agriculture – not whether it is a personal benefit for the individual landowner applying.

It is a challenge for decision-makers to determine which part of an application for change in the ALR is a benefit the applicant, and which part is a benefit to the future growth and development of agriculture. The summary of ALC decisions in the Comox Valley (Table 10) shows that, even with the best of intentions, the Commission's decisions to reject applications lead to more growth in agriculture than their decisions to approve applications.

The following section is offered as a quantitative framework for determining if an application for boundary adjustment in the ALR will benefit the long-term growth and development of agriculture.

9.1.2 Policy Considerations for Boundary Adjustments in the ALR

9.1.2.1 *The Smallest Lot that Maximizes Agricultural Production Potential*

Local government planners use lot size, along with other planning tools, to direct specific types of development to specific areas. Lot size has a similar effect in the farming area. Different types of agricultural production and different production systems tend to have different economically efficient farm parcel sizes.

Table 2 provided an example of the different level of revenue that can be generated from a 5-acre parcel using different commodity types and different production systems. The smaller the farm lot, the higher the real estate market value of the farmland (Figure 20), and thus a higher revenue needed for the farm to be successful. In general, fewer types of farming activities can thrive successfully on smaller agricultural lot sizes.

When veterans returned from the two World Wars in the previous century, and were given land (under the *Veterans Land Act*) 5 acres was almost more than one person could farm. After the Green Revolution of mechanization and intensification in the 1960s, 10 acres became the more popular size. Because of new agricultural technology (and environmental and social pressures), in the 21st century in the Lower Mainland, 20 acres is becoming the lot size that provides for cost effective production of the widest variety of agriculture products.

For example, a mechanical blueberry harvester that could once harvest 10 – 15 acres can now harvest over 20 acres. Mainstream poultry farms are adopting new tunnel ventilation systems that carry the exhaust air farther from the barn. This can impact neighbouring farms growing food products. Poultry farms are locating on larger parcels to provide space for setbacks or mitigation options to reduce potential impacts on neighbours.

In order to maximize economies of scale, farms in Chilliwack (which can be made up of one or more lots) have been increasing in size and intensity. The 2011 Statistics Canada Census of Agriculture has shown that the average farm size in Chilliwack has grown. In 2001, the average farm size was 40 acres, and that increased by 80% to 72 acres in 2011⁷¹. Similarly, the average dairy farm in Chilliwack had 67 cows in 1996, and that had increased by 66% to 111 cows in 2006⁷².

Currently Chilliwack has an oversupply of unused farm lots that are 10 acres or less, and little or no supply of unused lots over 10 acres (Figure 24). When a farm on a large lot wants to expand their farm operation, most of the land available to purchase is in lots under 10 acres. The real estate market value of land under 10 acres is higher than the market value of land they are currently farming (Figure 20). This may limit the potential growth of the farm operation.

9.1.2.2 *Irregular Lots*

Boundary adjustments may be used to overcome constraints to future agriculture production where lot shapes are irregular. This can occur on all sizes of lots. While boundary adjustments do not result in new

⁷¹ 2001 data from BC Ministry of Agriculture, 2008, "City of Chilliwack – Agriculture in Brief" and 2011 data from Table 004-0204 CANSIM, located at: <http://www5.statcan.gc.ca/cansim/a26;jsessionid=6C6D25A78299674236EE4382F47F6B8C>

⁷² BC Ministry of Agriculture, 2008, "City of Chilliwack – Agriculture in Brief."

lots, they change the size and shape of the lots involved, and these changes have a potential impact on the agricultural potential of the lots. In these situations, two questions arise:

1. What determines whether an irregular shape limits agriculture production?; and
2. How should the lot lines be realigned?

To support a boundary adjustment, the current shape of an irregular lot must prohibit production of several agricultural products. Examples may include a lot that is too narrow to meet agricultural building setback requirements or a narrow property along a watercourse that would limit agricultural buildings and some crop uses⁷³.

9.1.2.3 Lot Sizes and Boundary Adjustment Application Conditions

Based on the above evidence and discussion, the following two conditions for boundary adjustment applications (including lot line adjustments and subdivisions) and lot sizes are recommended:

- a) Boundary adjustments on large lots should not result in lots under 20 acres. For example, in a hypothetical example of two 40-acre parcels it would make economic sense to allow a boundary adjustment to one 60-acre parcel and one 20-acre parcel. It would not make economic sense to allow a boundary adjustment to one 75-acre parcel and one 5-acre parcel. The net benefit to agriculture of creating a parcel that is even larger than 20 acres, is outweighed by the net loss of creating a parcel under 10 acres that is less likely to be farmed in the future.
- b) Boundary adjustments that result in lots between 10 and 20 acres should create the largest possible farm lots to enable a variety of diverse agricultural activities. These applications should be supported by a Professional Agrologist report, to provide further information to support the application. (See below and footnote 78.)
- c) Boundary adjustments that result in lots smaller than 10 acres should be denied, since there is a significant existing supply of this size of lots that are already not being farmed, or not being farmed intensively.

Other potential requirements for lots less than 20 acres could include:

- For the smaller lot resulting from a boundary adjustment, provide a disclosure statement, in the form of a restrictive covenant under section 219 of the *Land Title Act*, which would inform landowners/future buyers that the property is in an agricultural area where normal farm practices may result in noise, dust, odour and other impacts. To be accepted by the Registrar of Land Titles, the covenant must have a “restrictive aspect,” e.g. minimizing the residential footprint and location, requiring extra soundproofing in residential buildings, etc⁷⁴.
- If one or more of the parcels use irrigation, a description of the existing water sources/licences and how the irrigation equipment will be maintained if the application is approved;

⁷³ BC Ministry of Agriculture, 2011. “Agricultural Building Setbacks from Watercourses in Farming Areas.” Located at: http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/local-government-bylaw-standards/riparian-setbacks/823400-1_agricultural_building_setbacks.pdf

⁷⁴ BC Ministry of Agriculture, 2015. “Guide to Edge Planning.” Located at: http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/agricultural-land-and-environment/strengthening-farming/800-series/823100-3_edge_guide_2015.pdf

- An Agrologist’s report indicating that the net benefit to agriculture that the boundary adjustment will create. The applicant should submit an Agricultural Impact Assessment (AIA)⁷⁵, as is also recommended in the Chilliwack Agricultural Area Plan (AAP)⁷⁶ but is not currently being made a mandatory requirement. The AIA must be written by a qualified Professional Agrologist⁷⁷ and should be paid for by the applicant. The application must provide evidence of a net benefit contribution to agriculture, and the benefit must be described and measured in detail. Having an application that is merely neutral in its impact to both the properties involved and the broader agricultural community should not be sufficient. The AIA could include the factors listed in the footnote below⁷⁸.

Conditions that should not be considered supportive of a boundary adjustment application include:

- A farm parcel that is not a perfect rectangle.
- A parcel that cannot fit a residential dwelling based on current size, shape, and setback requirements.
- Farm family planning issues (see alternative options in the section below).
- Personal reasons (e.g. divorce, estate settlement, severing existing multi-party ownership).

These situations do not restrict the parcel in question from being farmed, and as such the parcel should remain intact.

9.2 Alternatives to Use of Boundary Adjustments for Farm Family Planning

Boundary adjustments may be proposed for personal farm family planning reasons, such as divorce, succession planning for the next generation, or estate planning. There are alternatives to boundary adjustments that can accommodate a family’s personal financial plans, and maintain Chilliwack’s valuable large lot sizes for future agricultural production.

⁷⁵Metro Vancouver has prepared a relevant document: “Draft Agricultural Impact Assessment (AIA) Guidelines, 2014.”

www.metrovancouver.org/services/regional-planning/PlanningPublications/DraftAgricultureImpactAssessmentGuidelines.pdf

⁷⁶ Located at: <http://www.chilliwack.ca/main/attachments/Files/1979/AAP%20Final%20Report%20January%2016%2C%202012%2Epdf>

⁷⁷ Professional Agrologists are required by their Code of Ethics to only practice in within their area of expertise. They must identify up to 3 areas of practice every year when they renew their membership. Suitable areas of practice for a P.Ag. who undertakes an AIA would include: arable land evaluation, conservation planning and management; regulatory support and consultation; and rural community development and support.

⁷⁸ Agricultural Land Commission, 2016. What the Commission considers includes the following list: An analysis as to how the application enhances agriculture; the length of time that the applicant has owned the parcel; the size and location of the parcel; a description of the slope and natural features of the parcel; the agricultural capability of the lot; the suitability of the land for both soil-based and non-soil-based agriculture; access to groundwater and/or surface water for irrigation purposes; impact of proposed adjustments and/or developments on drainage patterns; an analysis of the impact on the ALR boundary and adjacent agricultural properties; compliance with the OCP, zoning bylaw, and Agricultural Plan policies; present land use, adjacent land use, compatibility with nearby agricultural uses, and buffers, or other physical barriers, from agricultural operations; whether the parcel has Farm Class as conferred by BC Assessment; other non-ALR areas where the proposed use could be located; an assessment of the precedent that the application will set; a demonstration of how the footprint/setback effect of any new residence will be compensated; air quality and noise implications; traffic volume and safety considerations; compensation and mitigation considerations, where relevant; if there have been attempted agricultural improvements to the parcel; if previous ALC application attempts (e.g. exclusion, non-farm use, subdivision) have been made for the parcel in question.

<http://www.alc.gov.bc.ca/alc/content/applications-and-decisions/what-the-commission-considers>

The BC Ministry of Agriculture has published a resource on succession planning⁷⁹. It is noted that when a family has both farming and non-farming children, a key concept is that an equitable distribution of assets may not be an equal distribution of assets. Some alternatives to land sale or division for succession purposes include:

- Identifying non-farm assets which the non-farming children might inherit;
- Setting up an insurance policy which they might inherit; and
- Building up non-farming assets from the payments that the farming child might make to the parents.

Long-term leases or partnership agreements can provide access to a portion of the property for the farming child, without having to resort to a boundary adjustment. A lease can provide the farming child access to the land during some sort of transition period. A partnership agreement can provide access to the land, stipulate that the land must be kept within the family, and ensure an income for the older generation⁸⁰.

9.3 Recommendations for Future Agricultural Planning in Chilliwack

The following recommendations are presented to provide clarity and certainty for both landowners and decision-makers regarding the future of agricultural land in Chilliwack:

- Future changes to the OCP and zoning bylaw should consider establishing only one zone for the entire ALR, to avoid encouraging subdivision/boundary adjustment applications based on varying minimum lot sizes between existing agricultural zones. The existence of small minimum lot sizes in some of the agricultural zones can be seen as encouraging a “race to the bottom” approach.
- Chilliwack should develop a formal policy on ALR boundary adjustment applications, which could include the recommendations presented in sections 9.1.2.2 and 9.1.2.3 of this report. This policy would provide guidance to both applicants (when they prepare applications) and to the AAC (when reviewing and commenting on applications).

9.4 Recommendations for Future BC Assessment Changes

Encouraging agricultural economic activity on the numerous small lots in Chilliwack is an important priority. Chilliwack should review and consider supporting recommendations for changes to the way BC Assessment assesses lots in the ALR that are not being farmed. Metro Vancouver has produced a recent report⁸¹ on this topic and specific recommendations include:

- Eliminating the school tax exemption (and other relevant fees) for residential properties in the ALR;
- Changing the income thresholds required to achieve farm classification;
- Conferring different benefits for farm classification based on a two-tier system (differentiating between small scale farms and commercial farms);
- Changing the method of assessment for ALR land; and
- Notifying BC Assessment of changes to land and buildings in the ALR.

⁷⁹ BC Ministry of Agriculture, 2011. “Family Farm Business Succession Checklist ... approaching the porcupine.” Located at: <http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/farm-management/farm-business-management/approachingtheporcupine.pdf>

⁸⁰ Jennifer Blair, 2016. “The dilemma of transferring land,” AlbertaFarmer Express, Located at: <https://www.albertafarmexpress.ca/2016/02/16/the-dilemma-of-transferring-land/>

⁸¹ Encouraging Agricultural Production through Farm Property Tax Reform in Metro Vancouver, 2016. <http://www.metrovancouver.org/services/regional-planning/PlanningPublications/AgricultureProductionTaxReformMV-2016.pdf>