



Development & Engineering Services,
February 2013

CITY OF KAMLOOPS

Planting the seeds for a sustainable future

Background Report: Food, Farming, and the Agriculture Area Plan

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ACKNOWLEDGEMENTS

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Funders

City of Kamloops
Investment Agriculture Foundation



Funding provided by:



This background report was funded in part by the Investment Agriculture Foundation of BC through programs it delivers on behalf of Agriculture and Agri-Food Canada and the BC Ministry of Agriculture.

EXECUTIVE SUMMARY

A historical review of the local agricultural industry suggests that Kamloops was once an “Agricultural Eden” with infrastructure and programming in place to support a vibrant agricultural economy. Long-term economic trends, however, have led to a decline in local agricultural production and diversity. An extensive review of the local and regional climate, agricultural industry, and landscape indicates that Kamloops and the surrounding region can potentially produce more food per capita than it does today and that cattle ranching is an industry in this region that has withstood the test of time.

Kamloops and the surrounding Thompson-Nicola Regional District (TNRD) have an ideal climate for agriculture. The warm, dry summers are desirable for field, fruit, and vegetable crops as well as specialty crops such as herbs, berries, and Christmas trees, although the North American Free Trade Agreement (NAFTA) has had a negative effect on BC’s tree fruit industry. The Thompson Rivers Basin area can support a wide range of crops including fruits and vegetables. Large valleys with lakes and rivers provide fertile soil and a ready water supply. The diverse climate of the region supports major crops like alfalfa, hay, most vegetables, and hard fruit along with the specialty crops previously mentioned. Local crop production is consumed partly within the region, with most production being shipped to the coast of British Columbia.

The Federal Research Station, located on Ord Road in Kamloops, has conducted a great deal of research on the agronomy of growing forage crops in the Kamloops area in cooperation with the BC Ministry of Agriculture and Lands (MOAL). The main purpose of forage production is for winter feed for over-wintering beef cattle. There are some hay growers in the area so forage can also be a cash crop. The grasslands surrounding Kamloops are invaluable as they provide summer feed for beef cattle.

This background report draws on the valuable information collected through numerous recent local and regional studies and incorporates additional information to create a comprehensive report on the state of agriculture in Kamloops, and to some degree, the region today. Also detailed is the importance of local/regional agriculture from economic, social, and environmental standpoints.

Community Futures Thompson Country (CFTC) released a series of reports called Back to the Land in 2000. These reports contain valuable information as to the state of the regional agriculture industry and were consulted in developing this report. To view the CFTC reports, contact CFTC at 250-828-8772.

TOWARD FOOD SELF-SUFFICIENCY

In order to produce a greater percentage of quality food to meet the local/region's needs, the local/regional agricultural industry must develop the capacity to do so through partnerships, programming, and infrastructure. In doing so, the City of Kamloops will likely have an opportunity to emerge as the business centre for agriculture in the region.

Given the production technology available today, over half of a hectare of farmland (0.524 ha) is needed to produce enough food for one person for one year according to a recent Ministry of Agriculture report. In order to produce a healthy diet for British Columbians, the report suggests that farmers need 2.15 million ha of food-producing land, of which 10% (215,000 ha) needs to be irrigated. In 2005, the MOAL estimated that approximately 189,000 ha of farmland had access to irrigation. To produce a healthy diet for the projected BC population in 2025, farmers would need to have 2.78 million ha in production, of which 281,000 would need access to irrigation. This means that to produce a healthy diet for British Columbians in 2025, given existing production technology, farmland with access to irrigation would need to increase by 92,000 ha or 49% over 2005 levels.

With a total population of approximately 130,000 within the TNRD (including Kamloops), and a much larger agricultural land base, it is likely that the communities surrounding Kamloops will have a greater role to play in terms of growing food for the regional population, while Kamloops is ideally situated to support this production through opportunities for agricultural supply businesses, value-added processing, cold storage, and distribution. With smaller parcels, Kamloops may be successful in focusing on intensified agricultural production including greenhouse production and hydroponics.

If BC could shift just 1.5% of its overall consumption per year to local sources, the province would supply 80% of its food needs by 2030. Based on projected population growth, achieving this target will require a doubling of production from current levels (www.policyalternatives.ca/everybitecounts).

Using the Ministry of Agriculture model, the City of Kamloops would require the following for 100% food self-sufficiency, based on a current population of approximately 87,000:

- *Dryland: 40,977 ha; and*
- *Irrigated Land: 4,602 ha.*

Putting this into perspective:

- *The City of Kamloops has only 13,023 ha of land within the Agricultural Land Reserve (ALR), of which 1,100 ha are irrigated; and*
- *The TNRD (including Kamloops) has 574,345 ha of land within the ALR of which 21,720 ha are irrigated.*

INTRODUCTION

WHAT IS AN AGRICULTURE AREA PLAN?

A Municipal AAP focuses on those policies that can be developed and undertaken by a local government to support and enhance the local agricultural sector.

The BC MOAL defines an AAP as a stakeholder-driven policy document focusing on a community's farm area to discover practical solutions to issues and identify opportunities to strengthen farming and contribute to agriculture and the community's long-term sustainability.

The following will be determined throughout this AAP planning process:

- The location of all viable agricultural land;
- Strategies to potentially increase sustainable food production;
- Appropriate land uses that can or should be supported on agricultural lands;
- The possibility of creating an agricultural co-operative or shared projects;
- Policies that can make agricultural land (farm operations) more economically viable;
- A scale of productivity and capability based on limitations for agricultural land;
- Agricultural activities that are best suited for different classifications of agricultural land; and
- How agriculture can be sustained for the next five to 20 years.

For more information on the framework for the AAP, please refer to the report to the Chief Administrative Officer from the Development and Engineering Services Department on Agriculture Area Plan, June 22, 2011 (Appendix 1).

WHY DO WE NEED AN AGRICULTURE AREA PLAN?

An AAP is needed to establish updated and more defined policies that will protect and promote agriculture and encourage sustainable agricultural practices. The Sustainable Kamloops Plan, adopted by Kamloops City Council in 2010, recommended the development of an AAP. The goals and policies in the proposed AAP will ultimately:

- Strengthen the agricultural land;
- Promote agriculture as a sustainable industry;
- Identify appropriate uses of the various classifications of agricultural land;
- Provide direction to the City of Kamloops on farm/non-farm related issues and uses; and
- Increase local food production in order to rely less on imported foods that can be grown in Kamloops and the surrounding region.

The City of Kamloops recognizes that the local agricultural sector may not have received the support and attention it deserves over the past decades. The AAP is a starting point to regenerate positive energy and municipal support for this important sector.

BACKGROUND REPORT GOALS

- Provide a review of existing data and research relative to local agriculture;
- Guide development of the AAP by focusing on issues and challenges;
- Complement the AAP for those looking for substance behind the plan;
- Provide background information that will help the community understand the agriculture industry and provide food for thought to support development of the AAP; and
- Generate discussion on agriculture in Kamloops.

THE IMPORTANCE OF AGRICULTURAL LAND PROTECTION

- *Without local farms, there is no local food and little food self sufficiency in times of crisis;*
- *A growing population is dependent on growing, not shrinking, cropland area;*
- *Local agriculture-related operations equate to dollars back into the local economy;*
- *Farmers are stewards of the land. They engage in many different conservation practices that help to preserve the environment;*
- *Agricultural land provides important habitat for native and rare species;*
- *Local agricultural land has scenic, educational, and agri-tourism values; and*
- *Local agricultural operations tend to reconnect urban dwellers with their local farmers and helps create heightened understanding between the urban and rural populations.*

AAP DRAFT VISION AND MISSION

The draft vision and mission for the AAP have been developed based on feedback from the public surveys and the Agriculture Advisory Committee. They meet the intent of an Agriculture Area Plan and the principles of the Sustainable Kamloops Plan: Foundation for Sustainability. As the AAP development process moves forward, and further public consultation is achieved, the vision and mission will be solidified.

Vision

“Continued support and encouragement of an economically, environmentally and socially viable local agricultural sector.”

Mission

“The City of Kamloops and surrounding region are rich in agricultural history. Years from now, the City of Kamloops is once again referred to as an ‘Agricultural Eden’ and a regional hub for the agriculture sector. A thriving, economically viable and resilient local agricultural sector which preserves and optimizes the use of agricultural resources such as land, capital, water, labour and technology is embraced.

It is the City’s intent to search for opportunities by which it can promote agriculture as a viable land use and business by supporting the local agricultural sector, and working with senior levels of government and the community. Building stronger partnerships and promoting a local agricultural sector that honours our agricultural heritage and the contribution agriculture has had for the development of the City is crucial.

The City aims to support and encourage a local agriculture sector that contributes significantly to:

- Local food self-sufficiency
- Land and resource stewardship
- A growing diversified local economy
- Ensuring land is preserved and put into production for agricultural purposes”

EXPECTED OUTCOMES

The overarching expected outcome of an AAP is that it be formally adopted and used to guide implementation activities. It is expected that land use plans applied to farmland will be developed from a distinctly agricultural perspective.

The AAP will be a starting point in providing a better municipal support system for the local commercial agriculture sector and it will identify strategies and actions aimed at growing, sustaining and raising awareness about this commercial sector.

STAKEHOLDERS

Approximately 90 stakeholders have participated in the City's AAP development process in addition to the Agriculture Advisory Committee responsible for leading the development process. Stakeholders are individuals who completed an agriculture survey (producer, consumer, or retailer) in early 2012 and requested to be informed of the development as it moves along. Additional stakeholders have been added to the list as more people and organizations within the City are made aware of the development of the AAP through the City's website, by word of mouth, and news releases in the local papers.

As the process moves along, stakeholders have been made aware of the following:

- Current developments concerning the AAP's development (input on these developments is encouraged from the group); and
- Opportunities for public consultation including road show presentations and open houses.

In addition to the stakeholder list and upcoming public consultation opportunities, residents have an opportunity to be involved via the AAP Facebook page and the AAP webpages.



FARMING DEFINED

The City of Kamloops' definition for a farm operation reflect the BC Farm Practices Protection (Right to Farm) Act.

The BC Farm Practices Protection Act defines a **'farm operation'** as any of the following activities involved in carrying on a farm business:

- (a) growing, producing, raising or keeping animals or plants, including mushrooms, or the primary products of those plants or animals;
- (b) clearing, draining, irrigating or cultivating land;
- (c) using farm machinery, equipment, devices, materials and structures;
- (d) applying fertilizers, manure, pesticides and biological control agents, including by ground and aerial spraying;
- (e) conducting any other agricultural activity on, in or over agricultural land;

and includes:

- (f) intensively cultivating in plantations, any
 - (i) specialty wood crops, or
 - (ii) specialty fibre crops prescribed by the minister;
- (g) conducting turf production
 - (i) outside of an agricultural land reserve, or
 - (ii) in an agricultural land reserve with the approval under the Agricultural Land Commission Act of the Provincial Agricultural Land Commission;
- (h) aquaculture as defined in the Fisheries Act if carried on by a person licensed, under Part 3 of that Act, to carry on the business of aquaculture;
- (i) raising or keeping game, within the meaning of the Game Farm Act, by a person licensed to do so under that Act;
- (j) raising or keeping fur bearing animals, within the meaning of the Fur Farm Act, by a person licensed to do so under that Act;
- (k) processing or direct marketing by a farmer of one or both of:
 - (i) the products of a farm owned or operated by the farmer, and
 - (ii) within limits prescribed by the minister, products not of that farm, to the extent that the processing or marketing of those products is conducted on the farmer's farm;

but does not include:

- (l) an activity, other than grazing or hay cutting, if the activity constitutes a forest practice as defined in the Forest and Range Practices Act;
- (m) breeding pets or operating a kennel;
- (n) growing, producing, raising or keeping exotic animals, except types of exotic animals prescribed by the minister.

For more information on the BC Farm Practices Protection (Right to Farm) Act, please visit:
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96131_01

AGRI-TOURISM DEFINED

The Agricultural Land Reserve Use (ALR), Subdivision and Procedure Regulations permits temporary and seasonal agri-tourism activities in the ALR provided that land is assessed as 'farm' under the Assessment Act, that the agri-tourism activity is an accessory use but related to the farm or ranch, and provided that the activity promotes or markets farm products produced on that farm.

For more information on the regulations of the ALR, please visit: http://www.alc.gov.bc.ca/legislation/Reg/ALR_Use-Subd-Proc_Reg.htm

The Local Government Act provides the legislative framework for local governments. It determines how new municipalities are created or expanded, the election of councils and boards, the assessment and collection of taxes, administration, property management and spending.

Under the Act, certain provisions address agriculture such as those covering community planning, zoning, nuisance regulations, the removal and deposit of soil, weed and pest control and water use and drainage.

The Minister of Agriculture and Lands is responsible for the division of the Local Government Act that deals with the use of land for agricultural purposes. Approval from the Minister is required for zoning bylaws of local governments that would prohibit or restrict the farm use of land in farming areas. Farming areas are defined as land within the ALR or under an aquaculture license.

COMPONENTS OF A COMPREHENSIVE FOOD AND FOOD SUPPORT SYSTEM

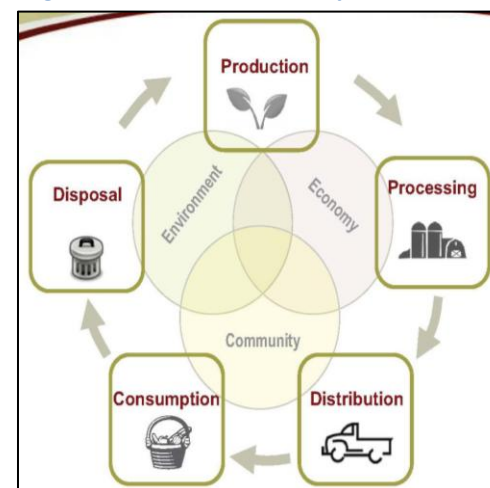
A bioregional association is an association of the residents of a natural and identifiable region. The City of Kamloops is an example of a bioregion. The primary categories that comprise a bioregion include:

- Food and food support systems;
- Shelter and buildings;
- Livelihoods and support services;
- Information, media, communication, and research;
- Community and security;
- Social life;
- Health services;
- Future trends; and
- Transport services.

For this report, the focus is on the first category of a bioregion: food and food support systems. A well-functioning, successful food and food support system that focuses on economy, health, and environmental values should include the elements identified in Appendix 2 along with the infrastructure to support them.

Appendix 2 provides a framework by which to measure success in the future in terms of growth of the local agriculture industry from a food and food support system perspective.

Figure 1 – A Sustainable Food System



A food system is composed of FIVE key components:

Production:

Growing and harvesting produce, either for sale or for own use

Processing:

Processing and packaging food and drink; manufacturing packaging and machinery/operations

Distribution:

Storage, transporting and sale between producers, processors and retailers

Consumption:

Marketing, retailing; eating and drinking outlets; food preparation

Disposal

Disposal of food and food-related items; waste management (reduce, reuse, recycle, recover)

CURRENT SETTING

In early 2012, both the City of Kamloops and Community Futures Thompson Country conducted surveys throughout the City and the TNRD to determine public perspectives toward agriculture. Many of the producers that took part agreed to be part of a mapping exercise that identified for the general public the location of local and regional farms and the products they offer. In total, 75 producers participated in the exercise with meat and meat products being identified as one of the major agricultural staples produced in the area.

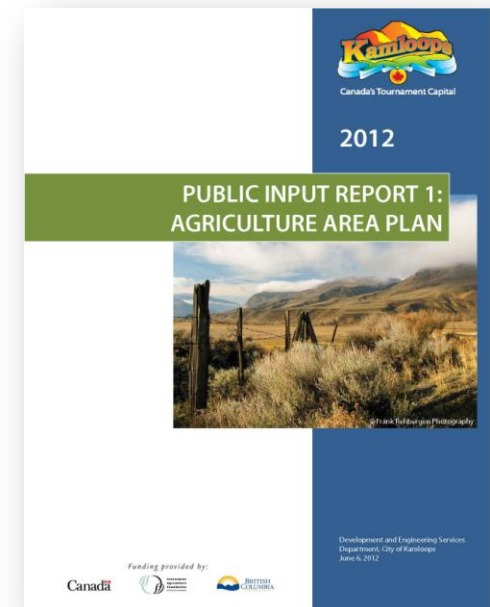
*To view the regional/local producer map and learn more about producers and their products, see Map 1 or visit:
www.tsfoodconnections.ca/foodproduce*

Agricultural land is limited and often at risk by human activities, making it a prime candidate for protection through the establishment of land reserves. In BC and across Canada, in places facing high levels of population growth and urbanization, farmland can shrink due to increasing demand for developable land. Agricultural land tends to be flat and affordable having good drainage, making it attractive for both agriculture and urban development. As a result, urban development is widely recognized as the main cause of farmland loss in North America. However, many people in urban communities place a high value on having productive farmland within close reach.

As a result of this background exercise, it is apparent that agricultural land in Kamloops is, in many cases, underutilized and has potential, depending on location and land suitability, to be converted to food production rather than used for forage alone.

Read Public Input Report 1: Agriculture Area Plan to find out more from the preliminary surveys:

<http://www.kamloops.ca/environment/land-agricultureplan.shtml>



Due to topography, existing growth, and anticipated steady future growth, local agricultural land is under pressure for development based on the land base remaining in the City. Map 2 (see Maps Section) identifies the restrictions to future growth based on a number of parameters such as environmentally sensitive lands, ALR land, hazard lands, and existing developed areas. Bringing existing under-productive, but arable, agricultural lands into production may help support agricultural land preservation.

WHERE IS OUR FOOD COMING FROM?¹

- BC is more reliant on imports of fruits and vegetables than other foods
- BC produced about 3.0, imported about 2.0, and exported about 1.6 billion dollars worth of food in 2007
- Approximately half the value of the food produced in BC (i.e., 1.6 billion dollars out of the total value of food produced in BC of 3 billion dollars) is exported.
- Approximately 70% of BC's imported vegetables came from the United States in 2007 of which about 17% came from Mexico with China also supplying 7%
- In 2007, 55% of BC's imported fruit came from the United States (predominantly California), about 8% came from Mexico and Ecuador respectively, 7% from China and 6% from Chile and the remaining 13% came from 30 other nations
- About 1.3 billion dollars of fish and 600 million dollars of livestock and meat products were produced in BC in 2007
- Approximately 70% of fats and vegetables, 60% of cereals, fruit and nuts and fish, 50% of shellfish, and 40% of meat imported into BC in 2007 came from the United States

In 2010, the top five Canadian menu trends included locally sourced food, sustainability, organic produce, artisanal cheese, and simplicity/back to basics.

THE IMPORTANCE OF SUPPORTING LOCAL PRODUCERS²

- Local agriculture helps local economies and local farmers;
- Food that does not travel long distances to arrive at one's plate is often fresher;
- Local agriculture makes our lives more resilient and self-sufficient. The more we control where our food and money is coming from, the more resilient we are;
- Local agriculture preserves green belts; and
- There are stricter health and safety standards in place for food grown in Canada than that in the United States and Mexico, places where much of our food comes from.

¹ (Ostry, Miewald, & Beveridge, 2011)

² (Ladner, 2011)

HISTORY OF LOCAL AGRICULTURE

An extensive historical timeline detailing the agricultural history of Kamloops has been developed by City Planning staff as a living document to provide insight into past agricultural successes and failures, trends, and potential opportunities for moving forward with the industry. The document is also intended to serve as a guide for new farmers interested in farming in the Kamloops region.

Post-contact, Kamloops has been a self-sufficient food producer since the 1880s, particularly with the introduction of the railways and the ability to ship local products to markets. Agriculture has been an important livelihood and economic factor in and around Kamloops since this time. The Hudson's Bay Company was likely responsible for the first agricultural activity in the area with the cultivation of timothy grass for forage for horses used in the fur trade and the import of cattle for beef and dairy. Potatoes were the main staple produced by the Hudson's Bay Company on the North Shore site of the fort in the mid-1800s. A great deal of agricultural experimentation took place during this time. The first ranch was started on the north side of the South Thompson River just east of Kamloops in the 1860s. Later in that decade, one of the first of many orchards in the Kamloops area was started at Tranquille.

To view the historical timeline or share additional historical agriculture events for the timeline, please visit: www.kamloops.ca/environment/land-agricultureplan.shtml or contact the Kamloops Museum & Archives at 250-828-3576.

As the local agricultural sector grew, so too did its support system. An annual Inland Agriculture Association event that displayed local crops and livestock was initiated, and processing facilities for livestock, tomato canning, and grains were built. In the late 1800s, Kamloops became known for its quality and variety of agricultural products, and by the early 1900s, Kamloops was referred to as an "Agricultural Eden".³ Agriculture flourished in the early 1900s with increased settlement in the area, the advent of the Kamloops and District Fruit Growers Association, BC Fruitlands, and the establishment of the Thompson Valley Canning Company. Irrigation was implemented; however, many farmers were ultimately forced to leave or turn to cattle ranching due to a lack of regular irrigation in the dry belt. Other support organizations and structures were formed such as the Kamloops Agricultural Hall (current site of Riverside Park), the BC Stock Breeders Association, the first formal farmers' market, the British Columbia Hereford Breeder's Association, BC Cattlemen's Association, BC Sheep Breeders Association, the Provincial Winter Fair, and local agricultural research that helped to support the growing local agricultural sector.

³ (Inland Sentinel, 1800s)

At one time, there were 16 dairies operating in Kamloops. A processing plant was built in 1946 to support these farms but closed in the early 1950s which put many local dairy farms out of business. Today only one dairy farm (Blackwell Dairy Farm) operates in Kamloops.

By the 1950s, consolidation of smaller companies and a year of severe weather resulted in a decline in the local growing industry. Improved highway networks resulted in a heightened reliance on imported produce due to cost savings. Pressures for apple and tomato growers to subdivide their land for housing increases as many of the BC Fruitlands' apple trees (Brocklehurst) were killed by early frost. A lack of sufficient farm and ranch labour and the cost of labour began to affect the local sector and added to production costs.

By the early 1970s, the overall acreage for commercial vegetables in Kamloops had dropped substantially. The ALR, a provincial zone that still exists today to protect and preserve agricultural land and control non-agricultural uses on farmland, was established through a public hearing process of the provincial government.

Today, few of the local agricultural support organizations of the past still exist, and most of the food purchased locally is imported from the United States, Mexico, and beyond. Many local growers and ranchers still face challenges related to irrigation, farm labour, and pressure to subdivide for housing.

A detailed description of the issues and challenges faced by producers today can be found in the Issues Summary Section of this report.

Lessons Learned From History:

- **Kamloops produced more of its own food per capita in the past than it does now;**
- **There was considerable infrastructure in place for storage and processing of local food as well as industry support systems;**
- **The former KXA was an important part of the local/regional agricultural fabric that brought in people and dollars associated with the bull sale, winter fair, pro rodeo, horse racing and other activities. A lack of support and awareness of the value of the KXA and what it stood for might be contributing factors to its departure;**
- **Ranching has survived historically because the local resource base is well-suited for this purpose. It can coexist in areas also used for other purposes such as logging, recreation, and wildlife habitat; and,**
- **A higher cost of living and the availability of mass-produced, cheap, imported food has resulted in fewer households supporting local producers as their products tend to cost more.**

ROLE OF URBAN AGRICULTURE

The Food and Agriculture Organization of the United Nations defines urban agriculture as crop and livestock production within cities and towns and their surrounding areas. It can involve anything from small vegetable gardens in the backyard to farming activities on community lands by an association or neighbourhood group. It is commonly not-for-profit in nature, often occurs on a smaller scale, and is commonly practiced on fallow public and private spaces, wetlands, and underdeveloped areas. Rarely is urban agriculture found on lands specifically designated for agriculture. Urban agriculture presents itself in a wide variety of forms including, but not limited to:

- Community Gardens
- Farmers' Markets
- Public Produce Projects
- Community Gleaning Projects
- Rooftop Gardening
- School Gardens
- Urban Beekeeping
- Spin Farming

The resurgence and popularity of urban agriculture as a means of building food security and a heightened awareness about healthy food is visible across North America and within the City of Kamloops. Urban agriculture plays a vital role in connecting urban dwellers with the food that they eat and raising awareness about healthy, local food. Its importance to the AAP is identified below:

- Through urban agriculture, children and adults alike learn about the origin of different foods and nutrition;
- Farmers across Canada are aging and new farmers are needed to fill the gap; and

The local food movement educates kids, parents, restaurant patrons, farmers' market customers, and community gardeners about the food they are eating where it comes from and how it affects their health.

Honeybees and pollinators in general are important for agricultural production. For example, when the honeybee population declines in an area, agriculture suffers. The loss of habitat due to industrial/urban development and intensive agriculture has affected food sources and nesting sites for bees. Inadequate supplies of pollen and nectar during foraging times from February to November cause malnutrition and, in some cases, starvation. Also, certain pesticides and insecticides have been known to harm the health of bees. Pollination, an instinctual activity of bees, nourishes our environment and is crucial for human beings, livestock, and wildlife. (www.nrdc.org/wildlife/animals/files/bees.pdf)

- Urban agriculture connects urban dwellers with the food that they eat and local farmers. It has the opportunity to instill a greater appreciation of local food and producers in the population; in this sense, it has an important role in educating and promoting the local agricultural sector.

The Kamloops Food Policy Council, a local food security advocacy group, has been a leader in raising awareness about the importance of nutritious, local food and implementing successful urban agriculture projects within the City. They were an important stakeholder in the development of the Sustainable Kamloops Plan and continue to partner with the City on projects that empower people to provide for themselves by growing their own food.



While urban agriculture plays a vital role in terms of education and promotion of the benefits of local food production, it cannot alone feed a growing population. The BC MOAL estimates that another 225,000 acres of irrigated farmland would be needed to produce a healthy diet for the people in BC in 2025.

For more detailed information on food security and urban agriculture, please refer to the Kamloops Social Plan. The Kamloops Social Plan has been determined to be the appropriate document to address the City's role in supporting urban agriculture, given that urban agriculture is at the micro-level of food support and security. The Social Plan is slated for review and update in 2013 through 2014. It is anticipated that this stakeholder-driven process will result in a much more detailed urban agriculture component in the Social Plan.

AGRICULTURAL RESOURCE BASE

BASELINE MAPPING

Baseline agriculture maps have been developed illustrating agriculture in Kamloops today and potential for future expansion of the industry. The following sections describe the maps in detail.

Farm Properties (Map 3)

There are currently 309 Kamloops properties classified as farms by BC Assessment. Map 3 identifies the 309 farm properties, 241 of which are located within the ALR and 68 of which are not.

Class 9, Farm - to qualify as a farm for BC Assessment purposes (not linked to ALC definitions) and to maintain farm status, the land must produce a prescribed amount of qualifying primary agricultural products for sale, such as crops or livestock. Farm buildings fall within Class 1.

*Visit BC Assessment for more information:
www.bcasessment.ca/public/Fact%20Sheets*

Growing Fruits and Vegetables in Kamloops (Map 4)

Table 1 Arable Crop Land in Kamloops	
Actively Farmed Land	2,400ha
Potential for Farming (irrigation source present or nearby)	213 ha
Potential for Farming (irrigation infrastructure needed)	785 ha
Dryland Production Capability (may have limited potential for irrigated crop production based on individual parcel analysis)	1,681 ha

Without water, very little can be produced in Kamloops

Based on Map 4, water availability for irrigation crops is limited for large scale farming. Much of the good agricultural land lies within Tk'emlúps te Secwépemc (TteS) land. Existing farming areas within the City include Heffley Creek, Westsyde, and Barnhartvale with the majority of the food production occurring in Heffley Creek and Westsyde. Tranquille on the Lake is regenerating in terms of agricultural activity and is showing potential as a fourth farming area within the City.



There are two general types of constraints to increasing agricultural productivity within Kamloops, bio-physical and economic. While the bio-physical factors are relatively stable, the economic factors are varied and quite fluid, having accounted for the changing agricultural activities in the City over the past century and a half. The bio-physical factors include:

Climate (cold, heat and moisture, measured by freeze free period, heat units {or growing-degree days} and climatic moisture deficit)

Kamloops is located in a moisture deficit (semi-arid) area making irrigation a necessity for most crops. Native grassland vegetation has adapted over the millennia to survive in moisture deficits. When land is left in its natural state these grasslands are useful for grazing. The valley bottoms have the highest heat units and longest frost free period (with the exception of a few south-facing slopes) - these two factors decrease as elevation increases. Consequently the valley bottoms are capable of producing the widest variety of crops, while the range of crops narrows as you increase in elevation. Greenhouses can modify climate regarding heat units and frost, but are generally only practical with high value crops and relatively small acreages.

Topography & Location (steep slopes, shallowness to bedrock, flooding, high water table, seepage or runoff collection areas)

Past glaciation has left Kamloops with incised valleys resulting in diverse landforms, soils and aspects which contributes to a number of micro-climates and other influences on the agricultural capabilities of agricultural parcels. While there are advantages to having such diversity it is hard to make generalizations other than to say that these site attributes can affect which crops and cropping methods are most suitable for a specific site. Modification of these factors is generally not possible, or is relatively expensive when it can be done.

Soil characteristics (soil structure, permeability, past erosion, fertility & chemistry, moisture holding capacity, salinity and stoniness)

These factors are the result of the actions of climate, vegetation and time on the parent materials that have developed into the soils we see today. In general, these factors are management considerations in a farmer's day-to-day operations, but most can be readily modified by the farmer over time to improve the soil's productivity.

For those readers who would like more detailed soils information, the Soils of the Ashcroft Map Area Ministry of Environment Technical Report 23 is available online at: <http://sis.agr.gc.ca/cansis/publications/surveys/bc/bc26/index.html>.

Note: A general range of crops for suitable for the different Climate Classes is available on page 11; however, the advances in crop breeding since the table was developed has rendered it almost obsolete.

Ranching and Dryland Production in Kamloops (Map 5)

Table 2

Ranching and Dryland Production in Kamloops

Crown Land Under Grazing Lease	2,598 ha
Crown Land under Grazing Tenure	3,855 ha
Vacant Crown Land	4,271 ha
Additional Land deemed suitable for dryland production	4,798 ha

Ranching is the production of beef cattle that are allowed to graze on rangelands during the spring, summer, and fall. Rangelands include pastures, grasslands, and forested areas and may be both privately and publicly owned. Ranching takes place primarily in the Interior region of British Columbia where rangeland is available.

Map 5 identifies existing rangeland within the City on Crown land and private land. Ranchers using Crown land for range purposes can either lease the land or enter into a tenure with the province. The majority of ranching and dryland production in the Kamloops area occurs in the southern portion of the City and along the political boundaries of the City.

The amount of forage produced annually on rangeland is difficult to predict and is highly dependent on climate, soil, elevation, latitude, and topographic conditions. Currently, BC Crown range produces about 900,000 Animal Unit Months per year. An Animal Unit Month is defined as the amount of forage that is required for one month by an average cow aged six months or older.

RANGE: is any land supporting vegetation that can be consumed by both domestic livestock and wildlife and is managed as a natural ecosystem.

Rangelands are either owned privately or by the Crown and are managed to supply forage for both livestock and wildlife.

Without range land, ranchers likely could not operate economically. Range provides feed for cattle between six to eight months of the year. Ranchers can then use their more productive lands to produce winter feed (hay).

The Grasslands Council of British Columbia works with land managers to achieve sustainable management practices and to implement proactive projects that will ensure the conservation and stewardship of BC's grasslands. For more information visit: www.bcgrasslands.org.



Ranchers in Kamloops depend on Crown rangeland. Crown range is typically used from May to October with private lands supplying the forage requirements for the remainder of the year.

Rangeland is often damaged by unmanaged activities. Plants are typically injured or killed by severe trampling; overuse by both wildlife and livestock; and unauthorized use by all-terrain vehicles, pedal bikes, and off-road vehicles. The resulting damage severely limits the range from performing important ecological functions such as holding the soil and water in place. Human disturbance also provides an ideal site for weed invasion. Weeds such as toadflax, leafy spurge, knapweed, houndstongue, orange-flowered hawkweed, and Canada thistle are all a serious menace to the health of BC rangelands.

With good range management, cattle grazing is compatible with many of these other uses and, in some cases, can improve the range for other uses. Wildlife predation on cattle can create significant economic impact on ranchers. Other challenges facing ranchers are mostly related to the costs of inputs and the effect of issues such as international trade, the relative value of the Canadian dollar, and the demand for beef, all of which affect the prices they receive for their animals.

Ranching fits nicely with the land base, topography and climate in the Kamloops area. Consumers have become accustomed to grain-fed beef, meaning beef that has been raised eating grass and finished on grain. BC ranchers can viably produce calves and raise them to a certain weight on grass forage. After that, they need a mix of grain and forage or other roughage. For the finishing process, cows are sent to Alberta, to large feedlots, which tend to have access to cheaper feed grain. There is growing evidence that grass-fed beef contains higher levels of conjugated linoleic acids that may have apparent health benefits. This is an opportunity on which some ranchers in the Southern Interior have begun to capitalize.

Dairy farms can operate in the Kamloops area, Blackwell Dairy being a case in point. There are some dairy farms relocating to the Thompson Nicola area. Some of these are moving all operations but others are starting up branch farms to raise replacement cows. Silage corn grows very well in the Kamloops area but few beef producers grow corn due to the specialized inputs required. Corn is often used to feed cows, so if dairy operations increase in the region, corn production will likely follow suit.

Ranching extends far beyond the political boundaries for the City of Kamloops indicating land interdependence between the City of Kamloops and the extensive agricultural land base within the TNRD.

ENVIRONMENT

Climate and Growing Season

Although Kamloops is situated only 258 km from the Pacific Ocean, the climate is dry, or semi-arid, and bordering on desert. As a result, availability of regular irrigation will continue to be a defining factor in determining the area's agricultural potential. Maps 6 through 8 illustrate growing degree days and mean daily temperatures, respectively, throughout BC.

In the mountainous Interior of Southern BC, topography exerts a major effect on climate and, in general, the surrounding highlands receive much more precipitation than the valley's bottom.

Table 3

Climatic Criteria: City of Kamloops

Minimum temperature $\leq 0^{\circ}\text{C}$ (days)	125.2	Degree days $> 5^{\circ}\text{C}$	2,308.6
Maximum temperature $> 30^{\circ}\text{C}$ (days)	29.3	Hours of bright sunshine	2,074.6
Maximum temperature $> 0^{\circ}\text{C}$ (days)	326.2	Measurable bright sunshine (days)	316.2
Days of rainfall	127.72	Sunshine during daylight hours	43.1%
Days of snowfall	36.03	Average relative humidity (1,500 LST)	48.8%
Degree days $> 10^{\circ}\text{C}$	1,283.7	Last Frost Spring	May 1
		First Frost Fall	Oct 5

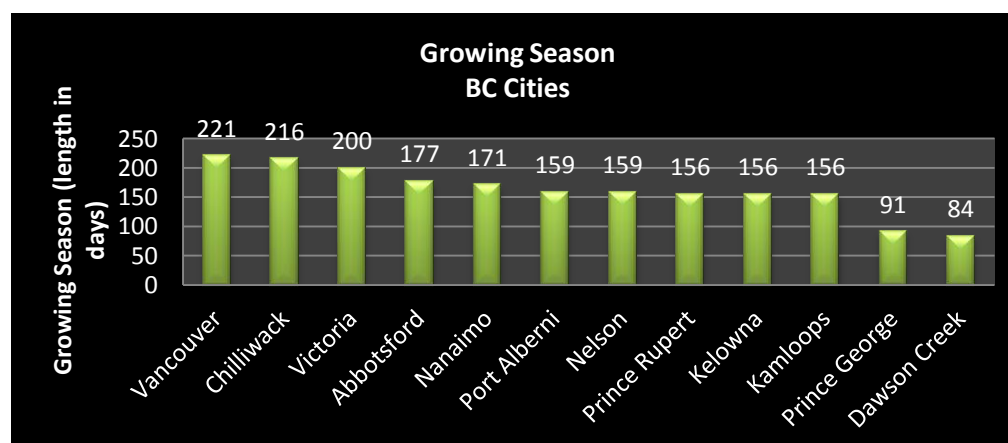


Figure 2 – Length of Growing Season in Selected BC Communities

Plant Hardiness Zones

The Plant Hardiness Zones Map (Map 9) outlines the different zones in Canada where various types of trees, shrubs, and flowers will most likely survive. It is based on the average climatic conditions and elevations of each area. This data is also an indicator of crop potential in Kamloops as it identifies zones which are suitable for fruit and vegetable production.

Canada has nine zones, ranging from 0 (the harshest) to 8 (the mildest). In creating the zone map, minimum and maximum temperatures, snow cover, rainfall, wind patterns, elevation, and the average number of frost-free days were all taken into account.

Within the City of Kamloops there are four different plant hardiness zones, ranging from Zone 6 to Zone 3. The map clearly depicts milder zones at lower elevations and closer to the Thompson River, while harsher zones exist as one moves away from the valley and the Thompson River. As a general note, agricultural crop potential is greatest in the valley closer to the river from a plant hardiness and soil fertility perspective.

As a general rule, if one lives in Zone 6, one should have good success with plants hardy in Zone 6 and up to three zones colder. Many species of fruits and vegetables grow well in Zone 6. Plants hardy to Zone 8 would never survive the winter on a property within Zone 6.

Zone maps do have shortfalls. If the information is inaccurate, a microclimate may exist. Soil, moisture, humidity, heat, wind, and other conditions also affect the viability of individual plants.

Allocation of Water

- There are 422 provincial water licences within the City of Kamloops.
- 241 of these licences are related to irrigation/stockwatering/nurseries. There are several throughout the City that are not being utilized and/or were abandoned when domestic water was supplied. Irrigation is one of the major limitations to agricultural potential in Kamloops, particularly in the southern portion of the City. Without a reliable source of water, there are limitations as to the types of crops that can be grown. If this barrier to crop production were removed, the diversity of crops and land base in terms of food growing would be greatly increased.

Map 10 identifies the existing provincial water licences within the City, many of which are linked to agriculture irrigation rights and are not being utilized. With the installation of water meters in the City of Kamloops, it will likely be more cost efficient and sustainable, in the long term, for agricultural producers to tap into existing water licences rather than continue to irrigate with domestic, filtered water. Also identified on Map 9 is the Maximum Day Per Capita Water Consumption in selected Kamloops neighbourhoods. Pineview Valley is among the lowest in terms of water consumption while farming areas such as Barnhartvale and the Noble Creek area are among the highest.

In the Southern Interior of BC, it is anticipated that longer and hotter growing seasons will increase crop requirements for water or will require major improvements in water efficiency.

All water in British Columbia is owned by the Crown on behalf of the residents of the province. Authority to divert and use surface water is obtained by a licence or approval in accordance with the statutory requirements of the Water Act and the Water Protection Act. In British Columbia, simply having access to surface water within or adjacent to property does not authorize a right to divert, use or store water.

The Importance of Ranch and Range

Kamloops is surrounded by bare, open slopes that have always been covered with grass. The long-term sustainability of these grasslands is threatened by increased pressures in areas such as:

- Urban expansion;
- Subdivision and development;
- Abusive recreation;
- Invasive weeds;
- Forest encroachment; and
- Inappropriate land management practices.

One of the best ways that grasslands can be preserved without negatively impacting other users or the environment is through cattle ranching. Most of the grasslands in and around Kamloops are valuable range land for cattle. Cattle graze on the grass and in turn produce meat and dairy for human consumption.

The ability to convert low-quality grasses into food for people makes ranching a sustainable part of the landscape.

There is a perception that livestock are being used inefficiently to produce food on land that could be used to produce “people food”. The reality is that the opposite is true. Livestock are capable of converting dryland range grasses into people food. Without beef and sheep, these lands would not be capable of producing food for human consumption - even with irrigation water in some cases.

FARM CHARACTERISTICS IN KAMLOOPS

Most of the data identified in this section is a combination of Census of Agriculture data and data collected as part of the Ministry of Agriculture Land Use Inventory (LUI) that was completed in the summer of 2011.

The Census of Agriculture data is for "Thompson-Nicola P (Sun Peaks and the Rivers)" (Area P). Area P encompasses a larger area than the City of Kamloops, as seen in Map 11, but it is the most relevant Census information available. Most of the farms in Area P, that are not in the City, are in proximity to the City and will have an economic impact in Kamloops.

AGRICULTURAL LAND BASE

Map 12 identifies the boundaries of the ALR within the City of Kamloops and surrounding region.

The ALR is a provincial zone, designated in 1973, in which agriculture is recognized as the priority use. Farming is encouraged and non-agricultural uses are controlled.

The ALR takes precedence over, but does not replace other legislation and by-laws that may apply to the land. Local and regional governments, as well as other provincial agencies, are expected to plan in accordance with the provincial policy of preserving agricultural land.

Current ALR Statistics:

- TNRD: 574,345 hectares; and
- City of Kamloops: 13,023 hectares.
- Total land area in Kamloops is 28,415 ha.

Approximately 46% of the land area in the City is within the ALR. This includes:

- 12,699 ha in surveyed parcels;
- 324 ha outside surveyed parcels;
 - 259 ha of designated rights-of-way; and
 - 65 ha of foreshore.

The provincial ALR covers approximately 4.7 million ha. It includes private and public lands that may be farmed, forested or vacant land. Some ALR blocks cover thousands of hectares, while others are small pockets of only a few hectares. In total, the ALR comprises those lands within BC that have the potential for agricultural production.

AGRICULTURAL CAPABILITY

The Canada Land Inventory (CLI) is a system for classifying the agricultural capability of soils. CLI soil classes range from 1 to 7, with Classes 1 to 3 considered as prime agricultural land. Class 4 has limitations that require special management practices or severely limit the range of crops or both. Classes 5 and 6 will essentially only produce forage (hay and pasture). Class 5-7 rangeland provides feed for cattle for six to eight months of the year. Ranchers can use their more productive lands to produce winter feed such as hay. Ranching works well with the land base, topography, and climate in the Kamloops area.

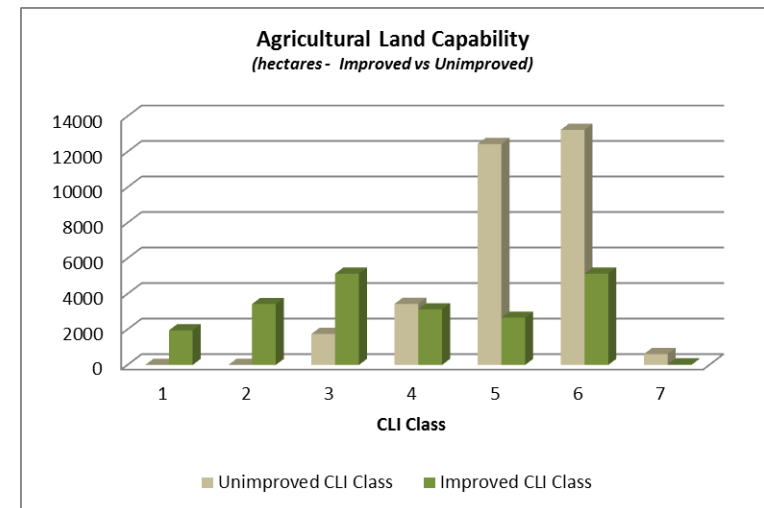
For most soils, there is an unimproved rating and an improved rating. The capability is "improved" when the limitations are removed. In Kamloops, the main limitation is "aridity" which is removed by irrigating.

Map 13 illustrates that, without irrigation, 25,678 ha (82%) of the land base (Classes 5 and 6 combined) will only produce forage (feed for the livestock industry). With irrigation, the area of prime land (Class 1, 2 and 3) increases from 1,744 ha to 10,513 ha (Map 13). Maps 13 and 14 illustrate the Land Capability Classification for Agriculture based on soil characteristics within the City (unimproved and improved classifications respectively). Currently, only 1,138 ha are irrigated.

Number of Farms

According to BC Assessment (2013), 309 properties within the City of Kamloops are currently classified as properties with provincial farm status. This status is for taxing purposes only. Local governments apply a tax rate to farmland which is typically lower than that for other land. To receive and maintain the farm classification, the land must generate income from agricultural production.

Figure 3 – CLI Capability of soils in the City of Kamloops (Source: LUI)



Minimum income requirements for Provincial Farm Status are calculated as follows:

- a) \$10,000 on land less than .8 hectares (2 acres);*
- b) \$2,500 on land between .8 hectares (2 acres) and 4 hectares (10 acres);*
- c) on land larger than 4 hectares (10 acres), you must earn \$2,500 plus five per cent of the actual value of any farm land in excess of 4 hectares.*

Note: the number of farms (with provincial farm classification) may be significantly lower than Census reporting because individual farms may own or rent several parcels. The number refers to all types of farming as well as grazing and dryland production.

According to the 2011 Census, there are 248 farms in Area P, down from 273 in 2006. Generally, the number of Census farms is lower than the number of farms with provincial farm status (per BC Assessment) because of differences in the definition. Census farms are "agricultural operations that produces at least one of the following products intended for sale: crops (hay, field crops, tree fruits or nuts, berries or grapes, vegetables, seed); livestock (cattle, pigs, sheep, horses, game animals, other livestock); poultry (hens, chickens, turkeys, chicks, game birds, other poultry); animal products (milk or cream, eggs, wool, furs, meat); or other agricultural products (Christmas trees, greenhouse or nursery products, mushrooms, sod, honey, maple syrup products)".

Farm size decreases as one gets closer to the City Centre.

Farm Size

Average farm size is not available from the land use inventory nor is it statistically available for the City. However, the average farm size in Area P (2011 Census) was 193.6 ha (478 acres) compared to the 392.5 ha average in the TNRD. It should be noted that the total area of farms includes "land leased from government" (presumably rangeland) which has represented 33-40% of the total farm area over the past 20 years. Average farm size, excluding land leased from government, in 2011 would be 210 ha (519 acres) - rather than the 392.5 ha (970.1 acres) reported below.

Table 4 – Total Area of Farms (TNRD)

Census year	Farms	Hectares (Acres)	Average farm size (TNRD)
2011	1177	462,032 (1,141,706)	392.5 ha (970.1 acres)
2006	1211	483,371 (1,194,436)	399.2 ha (986.3 acres)
2001	1175	381,388 (942,432)	324.6 ha (801.7 acres)
1996	1150	406,808 (1,005,246)	353.7 ha (873.8 acres)
1991	1008	407,597 (1,006,697)	404.3 ha (998.7 acres)

Table 5 – Owned and Rented (Owned versus rented land in Area P. Comparison of 2011 versus 2006)

<i>Year</i>	<i>Owned acres (% of total farm area)</i>	<i>Leased from governments</i>	<i>Leased from others</i>	<i>Total farm area (acres)</i>
2011	58,541 (49.3%)	55,327 acres (46.2%)	6,005 (5.0%)	119,873 (100%)
2006	59,511 (48.0%)	51,033 acres (41.1%)	13,537 (10.9%)	124,081 (100%)

Parcel Size - Area

The average farm size in Area P has increased by 90+ ha over the past 10 years, from 324.6 ha (801.7 acre) in 2001 to 392.5 ha (970.1 acre) in 2011. However, the average farm size is misleading likely due to a few very large farms that skew the data. The median farm size, based on Table 6, is likely at the low end of the 60 -70 acre range.

Table 6 – Farm Numbers by size (acres)

Comparison of 2011 and 2006 numbers for the
Census Area Kamloops P (Rivers and Sun Peaks)

Size of farm	Kamloops Area P		% of total	% change
Acres	2011	2006	2011	from 2006
Under 10	59	69	23.8%	-14.5%
10-69	76	80	30.6%	-5.0%
70-129	31	29	12.5%	+6.9%
130-179	22	29	8.8%	-24.1%
180-239	5	8	2.0%	-37.5%
240-399	10	12	4.0%	-16.7%

400-559	8	10	3.2%	-20.0%
560-759	4	5	1.6%	-20.0%
760-1,119	10	9	4.0%	+11.1%
1,120-1,599	7	3	2.8%	+133%
1,600-2,239	5	3	2.0%	+66.7%
2,240+	11	16	4.4%	-31.1%
Total	248	273	100%	-9.1%

TYPES OF ENTERPRISES

Livestock vs. Horticulture Land Use

1,481 ha in Kamloops are used for cultivated field crops as follows:

- 1,340 ha (90.5% minimum) of the cultivated field crop area are used specifically for production of livestock and/or livestock feed;
- 112 ha (7.6% maximum - tree fruits are listed as <1ha) are used for vegetables, berries, fruits, nuts; and
- 29 ha (2.0%) are used for Christmas trees (15 ha) and crop in transition (14 ha).

The Kamloops land use inventory reported that 1,481 ha (approximately 11% of the ALR) were used for field crops, although it is interesting to note that 209 ha of that were outside the ALR. Should these 209 ha be incorporated into the ALR?

Are there other parcels that perhaps are not suited for agriculture that should be removed from the ALR?

In 2007 Ray Frolek, a third generation rancher, approached the Nature Conservancy of Canada about working together to conserve the natural ecological values on his family's Kamloops-area ranch, while also continuing to raise cattle.

The project protects a total area of 7,828 acres (3,168 hectares) around Kamloops. A third of the protected area (2,342 acres/948 hectares) was purchased by NCC and will be leased back to the ranch on a long-term basis. The remaining portion of 5,486 acres (2,220 hectares) is protected by conservation covenants while remaining the property of the Frolek Cattle Company.

This creative conservation initiative allows the Frolek family to continue ranching on the land, while conserving the biodiversity of the landscape through the covenants and NCC's stewardship activities.

Livestock Use (by parcels)

- 74% (150 of the 203 parcels) used for livestock were used for equine (horse) operations.
- 92 of the 150 parcels (61%) are on parcels less than 4 ha (<10 ac.).
- Beef is the next most common livestock use. 23 (11%) of the parcels are used to support beef production.
- 30% of the parcels used for beef are less than 4 ha (10 ac.).
- Seven of the ten parcels used for poultry production are less than 4 ha (10 ac.).

The BC beef cattle industry is made up primarily of cow-calf operations. Approximately 4,086 cattle ranches operate in BC, making up 4.5% of Canada's national cow herd. Due to a weaker consumer market in BC for beef and a smaller feedlot and abattoir industry in BC, many of the calves raised in BC are marketed in the fall at live auctions to feedlots in Alberta and the US. Producers that have a good forage/grazing land base may keep their calves in BC for the first winter and sell to Alberta feedlots the following fall. In Alberta, calves are fed a grain diet and brought up to slaughter weight. A small portion of calves remain in BC for back-grounding or finishing.

The BC beef industry is important to BC's economy and supports many family and community businesses. The total economic contribution of the industry is estimated at \$500 million annually even with the majority being shipped to Alberta for finishing, processing, and distribution. There are an estimated 8,700 persons employed in the BC beef sector. This said, local processing facilities and animal waste disposal programs are a difficult sell within communities as the general public tends not to want to locate them within their neighbourhoods. Growth of this local sector may be limited by public perception.

Ranching has historically been the primary land use in the Kamloops area. Mining and ranching have coexisted at Afton since start-up in 1977. Sugarloaf Ranches, Afton's sister company, has operated a 250 head cow/calf ranching

A 600 lb calf sold in the fall to a feedlot in Alberta at \$1.30/lb would bring in approximately \$780. If the same calf was finished, processed, and distributed at wholesale prices to chefs and stores in BC, it may generate more for the BC economy and support employing BC feedlots, abattoirs, truckers and sales people as well as their suppliers. Grass-fed and finished beef may be a product for BC producers to explore from an economic and marketing perspective.

Land Use - Livestock vs Horticulture

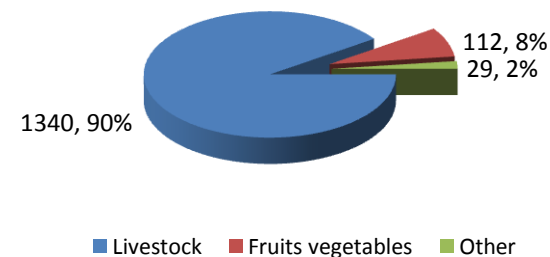
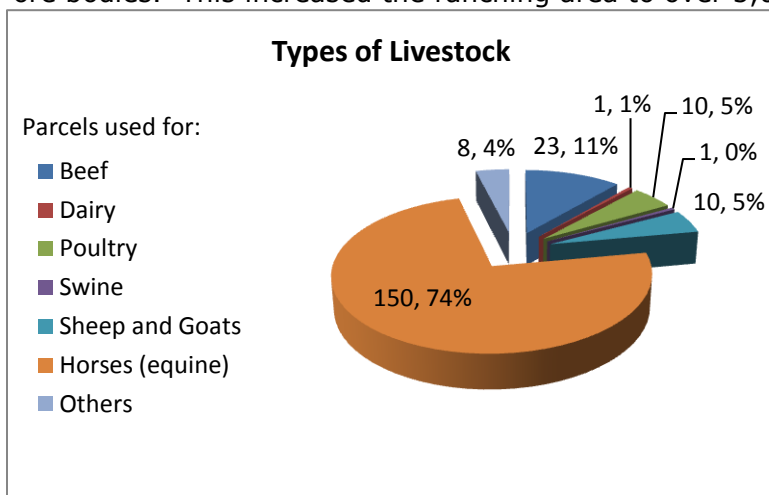


Figure 4 – Land use by livestock enterprises vs. land use for production of fruit and vegetable and other crops

operation on the land surrounding the mine site. In late 1988, the Morrison ranch was purchased to allow access to the Ajax ore bodies. This increased the ranching area to over 5,000 ha with approximately 600 head of cattle.



Most of the land used for mining purposes at Afton has been temporarily removed from the ALR on the condition that it be reclaimed and restored to its former level of productivity after mining activities are completed

Beef production continues to be the primary agricultural activity in the region. The beef industry and accompanying crops (hay and fodder) account for 85-90% of total agricultural acres. Both the BC Cattlemen's Association and the BC Livestock Producers Co-op Association are headquartered in Kamloops. A small dairy industry serves the local market. Several farms from the Fraser Valley have expressed interest in relocating to the interior and Kamloops is looking attractive to these operators.

Figure 5 – Parcels used for livestock production in the City of Kamloops (Source: BC Ministry of Agriculture Land Use Inventory Report - 2011)

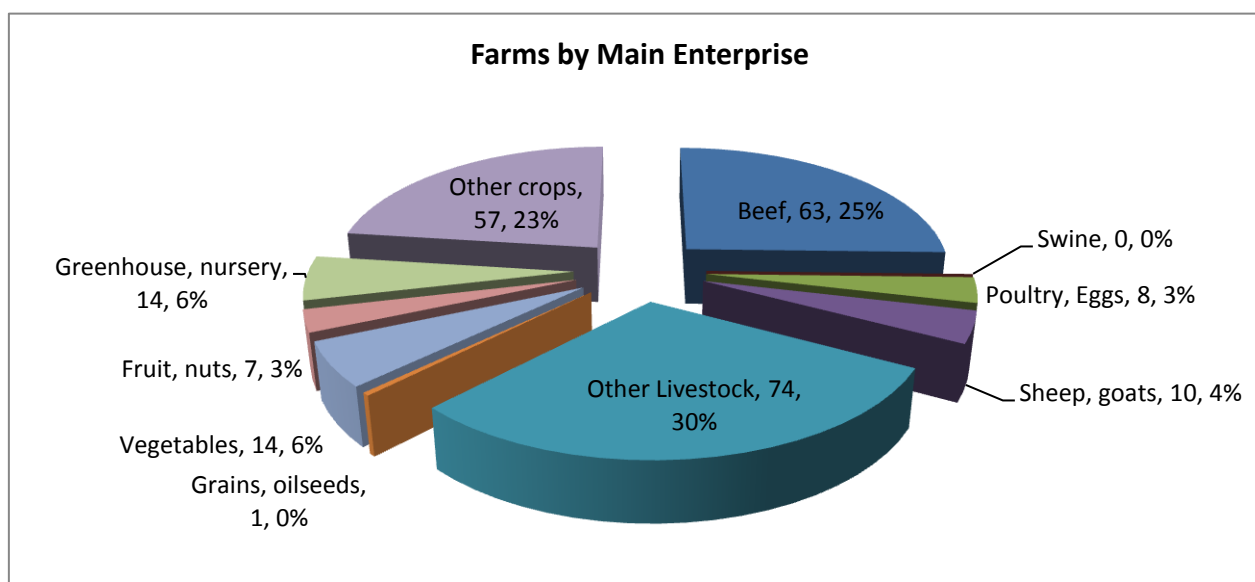
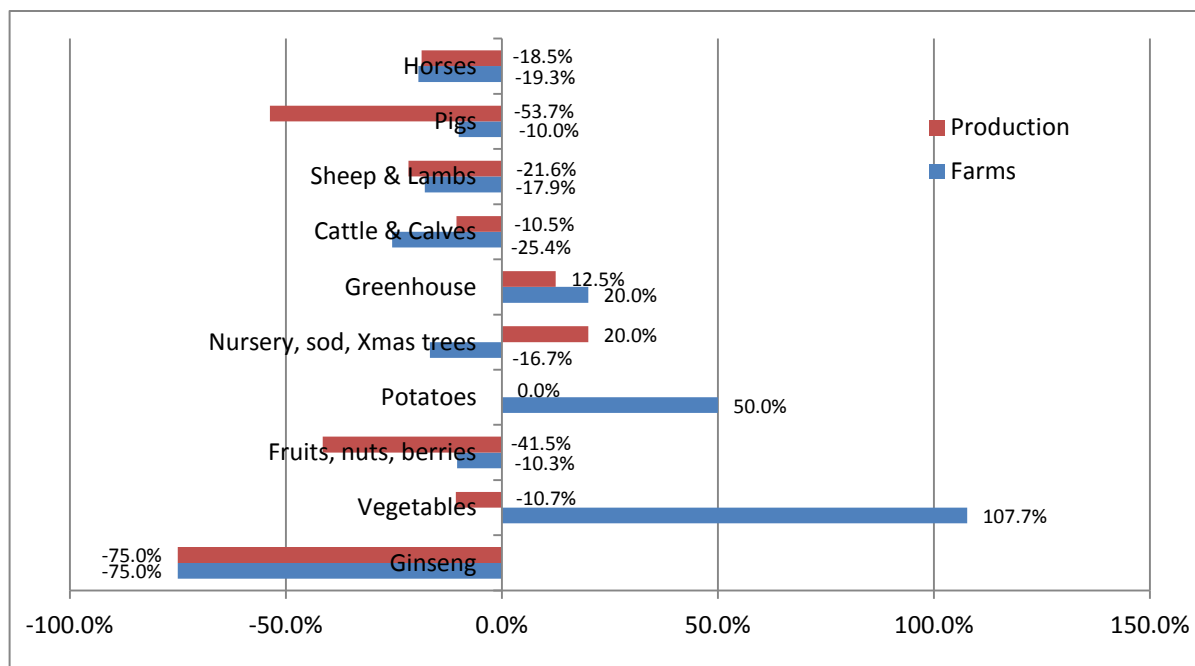


Figure 6 – Farm numbers by main enterprise (Source: 2011 Census of Agriculture – Kamloops Area P – Rivers and Peaks). Note: Other livestock includes horses.

Change in Farm Enterprises

The local agriculture industry has shifted over the years (Figure 6) and will continue to change. The most notable shifts are in ginseng and cattle and calves. The ginseng sector was declining prior to 2006 and has continued to decline since then, from four producers with 91 ha in 2006 to one producer with undisclosed production in 2011. Total cattle and calves have declined - production dropped 10.5% and producer numbers dropped 25.4%. Potatoes are reported as "field crops"; the area in production was not reported in either Census period but producer numbers increased. Vegetable production declined but producers numbers increased (i.e. farms became smaller).

Figure 7 – Changes in the number of producers and total production between 2006 and 2011 for various types of farms
(Source: 2011 and 2006 Census of Agriculture Area P)



The trend identified in Figure 7 indicates the need to better support farming in the community and region. While the economy has a role to play, strategies and actions that the City can support will be identified by the AAP to help reverse the negative change in production.

ECONOMICS

Area Gross Farm Receipts

Gross farm receipts for Area P, for the last two census periods, are shown in Table 7. The data is from the production year prior to the Census. As such, it may not represent average returns for area farms. Losses reported on farms that are not profit-oriented tend to pull the average down.

Table 7 – Gross Farm Receipts and gross margins - comparison of 2011 Census (for 2010 production year) and 2006 (for 2005 production year).

Area P	Gross Farm Receipts	Operating Expenses	Gross Margin (Total)	Gross Margin (%)	Gross Margin (average/farm)
2011	\$12,580,026	\$12,868,260	-\$288,234	-2.91%	-\$1,162
2006	\$20,011,871	\$21,349,006	-\$1,337,135	-6.82%	-\$4,892

The decline in Gross Farm Receipts is likely related to the following:

- BSE, or Mad Cow Disease, impacted the beef industry significantly during the two Census periods. In 2005, Alberta cow/calf returns were estimated at plus \$60; in 2010, cow calf returns were approximately \$-60 per head; and
- Ginseng production declined steadily, starting before the 2005 production year.

Profitability

The following sections describe a number of factors that affect profitability of farms and how the City of Kamloops' agriculture sector fares compared to other areas. Farm profitability, or lack thereof, is the major underlying issue facing agriculture. If farms were more profitable, many of the other issues identified in this planning process would not exist.

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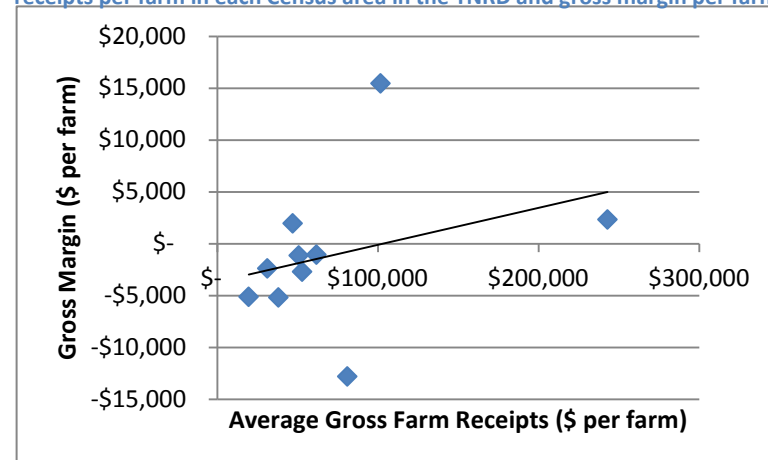
Gross Margins

Table 7 above shows the reported gross farm receipts, operating expenses and the resulting gross margin (i.e. gross receipts minus operating expenses which are expenses directly related to production) in Area P. Basically, it indicates that margins are only -2.91%, but are an improvement from -6.82% in 2000. On average, producers have not recovered their operating costs during the production years reported in the past two Censuses.

Scale of Farm Operations

Figure 8 shows the importance of economies of scale. The dots on the chart represent the average gross margin per farm in each of the electoral areas within the TNRD. Average gross margins increase with revenue per farm. The best fit trend line indicates that gross margins tend to be negative for farms with sales below about \$100,000 per year. Of course, there are exceptions. Intensive, small-scale operations producing high-value products can show profits with lower overall sales.

Figure 8 – Estimated break even for farms in the region. Chart shows average gross farm receipts per farm in each Census area in the TNRD and gross margin per farm.



Farm Size (Revenue)

Farm size, in terms of revenue generated, is extremely variable. The vast majority of the economic activity occurs on the large farms. The 26 largest farms (10.5% of the 248 farms) generate at least 68% of the area's gross farm receipts as seen in Figure 9. The 123 smallest farms (49.6%), with sales of less than \$10,000 per year, cumulatively generate less than 6.7% of the area's gross farm receipts.

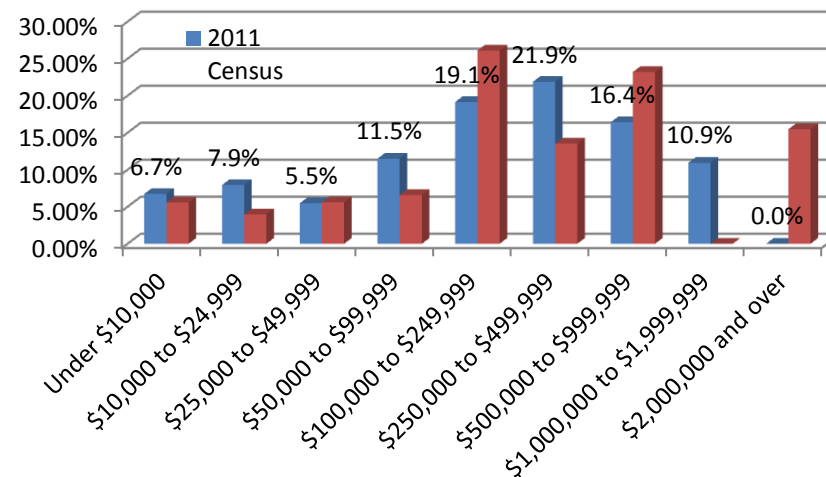


Figure 9 – Estimated Contribution to Gross Farm Receipts by Farm Size (revenue) (Source: Census of Agriculture Area P)

Intensity of Production

Figure 10 shows the average revenue per hectare (of ALR land) generated by farms in several regional districts in the BC interior.

The TNRD is among the least intensively farmed areas. Increased revenue per hectare might be achieved with more:

- irrigation;
- intensive use of fertilizers and other inputs;
- higher value crops;
- land clearing; and
- production of supply managed products or intensive livestock.

Farm size, in terms of revenue generated, is extremely variable. The vast majority of the economic activity occurs on the large farms. The 26 largest farms (10.5% of the 248 farms) generate at least 68% of the area's gross farm receipts. The 123 smallest farms (49.6%), with sales of less than \$10,000 per year, cumulatively generate less than 6.7% of the area's gross farm receipts.

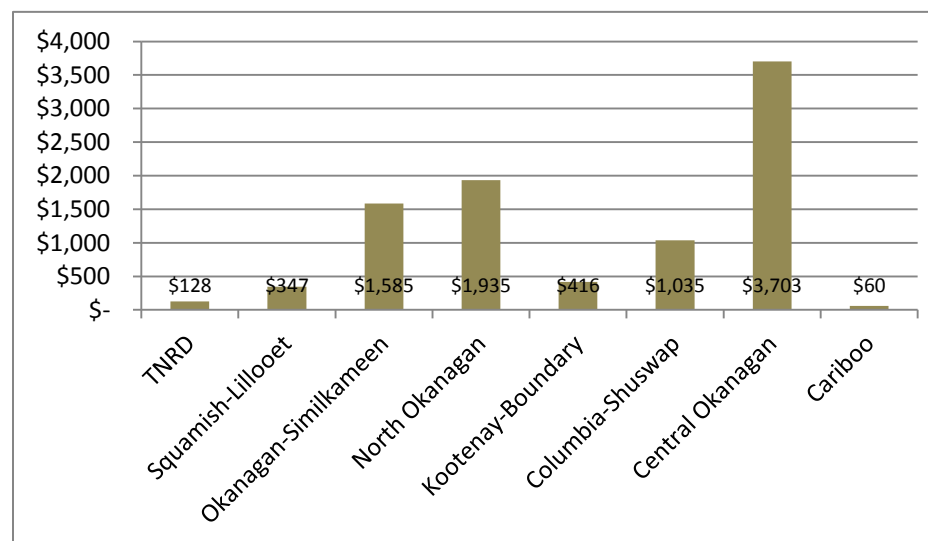


Figure 10 – Intensity of land use based on gross receipts per hectare of land in the ALR.

On Farm Capital

The total market value of farm capital increased by 22% between 2006 and 2011. The average increase in the value of farm capital was \$376,794 over 5 years or \$75,359 per year. This is important for a couple of reasons:

There is an old axiom that says, "farmers live poor, die rich". Income from operations has been negative over the past two census periods. The average is a net operating loss of \$1,162 per year. If the increase in farm capital is included, the average becomes a gain of \$74,167 per year. Farmers have been able to use, and have used, these gains in capital values to borrow money for operations, effectively allowing them to continue to operate at a loss.

It essentially creates a succession issue. There is not enough operating cash flow in the farm to pay long-term debt. New farmers therefore must buy in with very high levels of equity or have non-farm income to pay the mortgage.

Table 8 – Value of Farm Capital and change over past five years
(Source: Census of Agriculture Area P)

Type of Capital	2006	2011
Machinery and Equipment	\$24,189,626	\$20,948,841
Livestock and Poultry	\$9,920,493	\$9,567,952
Land and Buildings	<u>\$262,304,822</u>	<u>\$332,715,513</u>
=	\$296,414,941	\$362,715,513
Capital per farm	\$296,414,941	\$362,715,513
Change in value of capital		\$376,794

Preserving agriculture requires preserving the capacity to farm. This includes people - human capital. Recruitment of young farmers and succession planning are clearly becoming bigger issues over time.

HUMAN RESOURCES

Farms in the City of Kamloops, and the surrounding region, tend to be owner (and family) operated with only the larger farms employing year-round help. Small farms generally use seasonal employees for harvesting and, possibly, other seasonal operations such as seeding and crop maintenance.

Farm Operators⁴

The 2011 Census reports 375 operators on 248 farms compared to 400 operators on 273 farms in 2006. 95 of these operators reported working more than 40 hours per week on the farm; 110 worked between 20 and 40 hours per week and the remainder less than 20 hours per week.

⁴ Farm operators are defined as persons who are responsible for the day-to-day management decisions made in the operation of a census form or agricultural operation. Up to three farm operators can be reported per farm.

190 operators, or 50.7%, have off farm employment. 185 farm operators reported no off farm income. Only 30 reported less than 20 hours of off farm income per week.

In 2011, the average age of farm operators in Area P was 57.7 - up from 54.7 in 2006. The average age of farmers in BC was 55.7, a trend similar to other business sectors. Only 10 (2.6%) of the 375 operators are under 35 years old, a drop from 15 in 2006. In BC, about 5.4% of farm operators are under 35.

Recruitment of young farmers and succession planning are becoming bigger issues over time.

Employment

Agriculture employs about 3,642 weeks of paid labour. This is equivalent to about 73 full-time jobs (Table 9). Of this number, 45%, or 32.5, of these jobs are seasonal. The remainder are full-time, year-round positions. Reported employment is down from 43% from 6,351 weeks of paid labour in 2006.

Table 9 – Weeks of paid employment on farms in Area P (Source: 2011 Census)					
Paid work	2011		2006		% change since 2006
	Farms 2011	Weeks	Farms 2006	Weeks	
Seasonal	54	1,623	72	3,305	-51%
Year round	24	2019	37	3,046	-34%
Total	62	3642	95	6,351	-43%

INFRASTRUCTURE

Processing, Value Added and Cold Storage

A series of reports commissioned by Community Futures Thompson Country in the year 2000 suggests that one of the reasons there is not more value-added activity in the region is the lack of supporting services, including cooling. If reasonably priced cooling were available, it would encourage more value-added activities, thereby "creating" its own market. An increase in

cooling activities would increase the quality of perishable goods produced in the region. For small farmers, this would be an important competitive advantage in their efforts to build their businesses.

In Kamloops, there are relatively few large cold-storage facilities. In fact, there are facilities that have cold-storage capability, but are not used as such. In the North Okanagan/Shuswap there are more facilities, remnants of a historical fruit and produce industry. On-site cooling facilities can be found on several farms in the Thompson/Shuswap/Okanagan region.

Distribution and Transportation

Kamloops is the largest centre in the TNRD. Both the population of the TNRD and Kamloops are below 150,000. An extensive network of highways in the southern interior and the intersection of the country's two main rail lines occurs within the City of Kamloops. The regional population for a producer is typically larger than 150,000 and includes several cities and is most importantly tied to storage and cooling access for raw and semi-processed products.

Farmers' Markets

Farmers' markets generally consist of a number of growers selling their produce directly to consumers at a common location. Each producer has a separate stall or stand at the market. They are currently a very important channel for marketing the fare of local, smaller-scale producers and have the potential for becoming a more important force.

Currently there are three active, seasonal Farmers' Markets in Kamloops:

- The Kamloops Farmers' Market (downtown);
- North Shore Farmers' Market (Tranquille Road); and
- Tranquille Farm Fresh (Tranquille on the Lake).

At present there is also a winter farmers' market held inside Sahali Mall.

The purpose of the Kamloops Regional Farmers' Market Society is to encourage and support local production of food, and to provide an outlet for local produce and foods, in order to promote local food security. The Farmers' Market is a tradition in Kamloops, with historical roots, and is part of the fabric of the community.





With support from City Council and School District No. 73, the first market was held in 1978. 35 years later, the market is thriving and continues to be an inspiration, as it is a great gathering place to make and/or meet friends and exchange ideas, as well as a place to share mutual passions for food and community.

More information on the Kamloops Farmers' Market can be found at www.kamloopsfarmersmarket.com.

Training, Education, and Awareness

Venture Kamloops, the economic development agency for the City of Kamloops, provides a summary of the educational institutions available in Kamloops related to the agriculture industry. Some of these are included below.

Pacific Agri-Food Research Centre:

The Centre, located on Ord Road, is part of Agriculture and Agri-Food Canada's network of research centres in Canada. Research covers national agricultural priorities in the areas of horticultural and field crop production and protection.

Thompson Rivers University (TRU):

The University's new Centre for Innovation in Ranching, Range and Meat Production has been developed to facilitate research and development to help ranchers, producers and suppliers adopt new technologies that support sustainable ranching practices. Also offered at TRU is a culinary arts program that educates students about the local food system. Both the meat production program and the culinary arts program purchase local foods for their purposes.

Thompson Shuswap Chef Farmer Collaborative:

The Thompson-Shuswap Chef Farmer Collaborative (TSCFC) formed in 2010, with Ed Walker, Chef Instructor at Thompson Rivers University as its director.

The group formed a non-profit society with a mission of connecting local farms with local restaurants, and helping move locally grown food from seed to plate. The collaborative is also supporting farmers and food security organizations through grant programs.

One of the main goals of the TSCFC is to bring awareness of the goodness of local food to the region through education, entertainment and edible delights.

Marketing

Marketing is both a hindrance and an opportunity for agriculture in the region. Marketing of agri-food products is divided into two distinct categories: conventional and direct farm marketing. Both are present in the region with direct farm marketing the most popular with small-scale producers because it bypasses the "middleman". The producer grows or raises or processes and undertakes or arranges some or all of the following activities:

- Sorting (and washing and grading) or slaughter;
- Packing;
- Cooling;
- Transport;
- Storage; and
- Merchandising and retailing.

The producer's selling price is greater but so too is his or her workload. The main types of direct farm marketing channels in the region are as follows.

- On-farm;
- Roadside stands;
- Farmers markets;
- "U-pick" operations;
- Farm trails;
- Community Supported Agriculture (CSA); and
- Internet and direct mail.



<http://www.gov.bc.ca/agri/buylocal.html>

TRENDS

GLOBAL TRENDS

- Distribution systems worldwide have developed to the extent that perishable agricultural products can be competitively shipped anywhere in the world without a significant loss in product quality.
- Rising incomes in India and China are leading to increasing global demand for food. Billions of dollars have been invested in farmland in Africa and South America to produce food for Asian countries.
- Rising energy costs and climate change policy are increasing demand for biofuels causing land to be converted from food production to energy production.
- "Good Agricultural Practices" (GAP) are being developed to create a global standard of sustainable farm practices that will lead to safe and healthy food and non-food farm products.

CANADIAN AGRICULTURAL TRENDS

- The "foodie" movement is probably the most significant consumer trend related to agriculture. All over North America, there is a shift towards buying local food. The challenge with this is that there is still "cheap" food around and it is of better quality than it has been historically because of improvements in distribution. There is stronger demand for local and organic but it comes from a small portion of the population.
- The Canadian population is aging which will have implications on the type and quantity of food consumed. There is increasing discussion about the health benefits of foods. Environmental awareness and public perceptions will affect food choices in the future.
- Consumers are more conscious of food ingredients. More people are reading the packaging to reduce choose foods with zero trans-fats, low sodium, reduced sugar, etc.
- Federal policy is addressing food safety and biosecurity types of issues in ways that tend to be challenging for small lot operators.

PROVINCIAL AGRICULTURAL TRENDS

- The 100-mile diet and the "buy local" movement are strong in BC. Vancouver has recently made changes in policy to increase the number of Farmers' Markets within the city to improve urban access to local foods.
- Climate change policy and environmental awareness are, on one hand, adding to the demand for local food and perhaps creating opportunities for new products but also creating challenges for producers to become greener - to meet new environmental standards.

REGIONAL AND LOCAL TRENDS

- Agri-tourism has gained a strong presence in the TNRD region as many farms and ranches have diversified to now provide tours and Bed and Breakfast services. Besides direct employment, a strong service industry including equipment, irrigation, and general supply firms supports the agricultural sector.
- There is an increasing number of organic growers in the Thompson-Nicola-Shuswap area from which one can obtain organic or naturally produced foods.

Vegetable production of speciality products such as baby vegetables for the ready to use markets (e.g. baby carrots, corn, beets, cherry and roma tomatoes, leeks, squash, spinach, and eggplants), exotic greens (curly cress, pink cress, dandelion greens, various types of lettuce such as escarole, frizee, red/green oak leaf, red/green romaine, and red/green leaf) may provide added opportunities.

POLICY FRAMEWORK

FEDERAL POLICY

Agriculture and Agri-Food Canada (AAFC)

AAFC is the Federal Agency responsible for policies governing agriculture production, farming income, research and development, inspection, and the regulation of animals and plants. It also has responsibilities regarding rural development.

- Organizations for which AAFC is responsible include:
 - Canadian Dairy Commission
 - Canadian Food Inspection Agency
 - Canadian Grain Commission
 - Farm Credit Canada
- National Farm Products Council
- Prairie Farm Rehabilitation Administration
- Research Branch
- Rural Secretariat
- Co-operatives Secretariat

AAFC is responsible for a number of Acts related to agriculture and food in Canada:

- Agricultural Marketing Programs
- Agricultural Products Marketing Act
- Animal Pedigree Act
- Canada Grain Act
- Canadian Agricultural Loans Act
- Canadian Dairy Commission Act
- Canadian Wheat Board Act
- Department of Agriculture and Agri-Food Act
- Experimental Farm Stations Act
- Farm Debt Mediation Act
- Farm Credit Canada Act
- Farm Income Protection Act
- Farm Products Agencies Act
- Prairie Farm Rehabilitation Act

Federal government support of the agricultural sector varies across provinces. On the basis of government support as a percentage of agriculture and agri-food GDP, farmers in PEI, Newfoundland and Labrador, Quebec, Nova Scotia, and Manitoba received the most support.

For more information on AAFC and to learn more about programs offered, visit www.agr.gc.ca/index_e.php.

Canadian Food Inspection Agency

The Canadian Food Inspection Agency (CFIA) is a science-based regulatory agency that is dedicated to the safeguarding of food, animals, and plants, which enhance the health and well-being of Canada's population, environment and economy. The agency was created in April 1997 by the Canadian Food Inspection Agency Act for the purpose of combining and integrating the related inspection services of three separate federal government departments: AAFC, Fisheries and Oceans Canada, and Health Canada.

CFIA Regulations include:

- Dairy Products Regulations
- Egg Regulations
- Processed Egg Regulations
- Honey Regulations
- Licensing and Arbitration Regulations
- Livestock and Poultry Carcass Grading Regulations
- Organic Products Regulations
- Maple Products Regulations
- Processed Products Regulations
- Fresh Fruit and Vegetable Regulations

For more information on CFIA, visit www.agr.gc.ca/index_e.php.

Canada Agricultural Products Act

The Canada Agricultural Products Act (CAPA) regulates the marketing of agricultural products in import, export and interprovincial trade and to provide for national standards and grades of agricultural products for its inspection and grading, registration of establishments, and standards governing establishments. The following topics are covered under CAPA:

Further information on CAPA can be found at www.laws-lois.justice.gc.ca/eng/acts/C-0.4/page-1.html.

For more information on programs available for the beef industry, visit www.cattlemen.bc.ca/.

PROVINCIAL LEGISLATION AND LAND USE POLICY

BC Ministry of Agriculture and Lands

The purposes and functions of the BC MOAL are related to the:

- Production, marketing, processing and merchandising of agricultural products and food;
- Institution and carrying out of advisory, research, promotional or education extension programs, projects or undertakings relating to agriculture and food; and
- Collection of information and preparation of statistics relating to agriculture and food and the dissemination of these statistics as the Minister considers advisable.

The mission of the Ministry of Agriculture is to cultivate a competitive and socially responsible agri-food sector.

The Ministry is responsible for the:

- Agricultural Science and Policy Division
- Innovation and Governance Branch
- Plant and Animal Health
- Food Protection Branch
- Strategic Industry Partnership
- Sustainable Agriculture Branch
- BC Farm Industry Review Board
- Business Risk Management Branch
- Policy and Industry Competitiveness

Ministry Boards and Commissions:

- Agricultural Land Commission
- BC Chicken Marketing Board
- BC Egg Marketing Board
- BC Turkey Marketing Board
- BC Milk Marketing Board

For more information on the MOAL, visit www.gov.bc.ca/agri.

The government of British Columbia is currently investing \$2 million to help BC producers and processors promote local foods. The funding supports local businesses and organizations to launch or expand their marketing campaigns, and allows BC's diverse food industry to use customized promotions specific to their market and needs.

For more information on this program, visit www.gov.bc.ca/agri/buylocal.html.

Farm Practices Protection Act

The Farm Practices Protection (Right to Farm) Act (FPPA) came into effect in 1995 and gives farmers the right to farm in the ALR and on land zoned for farm use.

The FPPA protects farmers that are using normal farm practices from nuisance lawsuits and nuisance by-laws of local governments. It also establishes a process to resolve concerns and complaints in order to:

- Let farmers farm;
- Keep people out of court;
- Deal fairly with people's concerns and complaints; and
- Deal with poor farm practices.

The FPPA is administered by the MOAL. For more information on FPPA, visit:
www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96131_01 or
<http://www.al.gov.bc.ca/resmgmt/sf/farmpp/index.htm>.

Agricultural Land Commission

The Provincial Agricultural Land Commission (ALC) is an independent provincial agency responsible for administering the province's ALR zone in favour of agriculture. The Commission is responsible for the administration of the ALC.

The purpose of the ALC is to:

- Preserve agricultural land;
- Encourage farming in collaboration with other communities of interest; and
- Encourage local governments, First Nations, and the government and its agents to enable and accommodate farm use of agricultural land and uses compatible with agriculture in their plans, by-laws, and policies.

To read more about the ALC and associated policies, visit www.alc.gov.bc.ca/index.htm.

Environmental Programs

Environmental Farm Plan and Beneficial Management Practices Programs

This is a joint program funded through the Growing Forward Agreement in cooperation with AAFC, MOAL, and the BC Agricultural Research & Development Corporation (ARDCorp). ARDCorp delivers effective and affordable programs and services that advance both the individual producer and entire agriculture sector while benefitting local communities. These programs are designed to assist producers in developing an environmental action plan for their farm. This is a plan that enhances natural resources and reduces the possibility of accidental harm to soil, air, water and biodiversity values. Environmental farm planning is a no charge, confidential, voluntary process available to producers to identify both environmental strengths and potential risks on their farms. As appropriate, it includes a prioritized action plan to reduce risks.

Sustainable agricultural systems can only result from sound management of natural, economic and human resources.

For more information on Environmental Farm Plans and other programs offered through ARDCorp, visit www.bcac.bc.ca/ardcorp.

Beef Industry Specific Programs

BC beef producers participate in and utilize a variety of programs to improve their operations and develop better management, health and safety practices.

The following are some of the programs available to BC beef producers:

- Advance Payment Program
- Environmental Farm Planning Program
- Premises ID
- Age Verification
- Farm Safety
- Riparian Interface Stewardship Program
- Wild Predator
- Fencing
- Verified Beef Production (VBP)
- Agriculture Wildlife Forage Program

For more information on programs available to beef producers, visit www.cattlemen.bc.ca.

The Land Conservancy of BC

The Land Conservancy is a non-profit, charitable Land Trust working throughout British Columbia. TLC protects important habitat for plants, animals and natural communities as well as properties with historical, cultural, scientific, scenic or compatible recreational value. Since 1997, TLC has been working with members of the agricultural community to promote agriculture as an environmentally compatible industry.

FUNDING FOR AGRICULTURE

Opportunities for funding of agricultural activities can be found at: <http://smartfarmbc.ca/funding-sources>. Below are a few of the current opportunities for agricultural funding.

Investment Agriculture Foundation

The Investment Agriculture Foundation strategically invests federal and provincial funds in support of innovative projects to benefit the agri-food industry in British Columbia. Funding is available to help the industry seize new opportunities and deal with emerging issues. (http://www.iafbc.ca/funding_available/)

BC Buy Local Program

The government of British Columbia is investing \$2 million to help B.C. producers and processors promote local foods. The funding supports local businesses and organizations launch or expand their marketing campaigns, and allows B.C.'s diverse food industry to use customized promotions specific to their market and needs.

Eligible organizations include associations, cooperatives, marketing boards, Aboriginal groups, businesses and non-profit organizations. (<http://www.gov.bc.ca/agri/buylocal.html>)

Women in Agriculture Initiative

Women in Agriculture is an initiative of the Agri-Food Futures Fund to assist women in their pursuit of opportunities to build and strengthen the agriculture industry in BC. (http://www.iafbc.ca/funding_available/programs/WIA/wia.htm)

LOCAL REGULATIONS AND POLICIES

KAMPLAN 2004: The Official Community Plan

KAMPLAN 2004: The Official Community Plan is the statement of goals, objectives and overarching policies to guide decisions on planning and land use management within the City of Kamloops, respecting the purposes of local government. Section III: Neighbourhoods Item 1.7 relates to policies for rural areas of the City. Based on feedback from the local agricultural sector, this section and Section 5.0 Agricultural/Resource Lands of KAMPLAN should be updated and expanded to better support commercial agriculture in the City. A thorough review and update of existing local policies related to agriculture will be conducted upon completion of the AAP.

The Official Community Plan can be accessed from
<http://www.city.kamloops.bc.ca/kamplan/index.shtml>.

Section 917 of the Local Government Act provides local governments with the authority to adopt farm by-laws to regulate farm management activities in farm areas.

Sustainable Kamloops Plan 2010: Foundations for Sustainability

An AAP for the City of Kamloops is identified as a high priority of the public in the Sustainable Kamloops Plan. The following policy statements pertaining to agriculture and food are identified in the Sustainable Kamloops Plan:

- Ensuring more food is grown locally to respond to impacts elsewhere and ensuring water conservation measures are implemented;
- Increasing the number of active farms in the Kamloops area;
- Considering establishment of an urban growth boundary; and
- Protecting viable ALR lands in order to safeguard local food production capabilities.

Agriculture planning is intrinsically linked to all of the key sustainability components identified in the Sustainable Kamloops Plan: Foundations for Sustainability. This plan sets the stage for future sustainable growth of the City and considers the importance of striving for balance of the integrated goal of economic prosperity, social well-being and environmental stewardship.

A brief description of the linkage between the AAP and the principles of the Sustainable Kamloops Plan is included in Appendix 3. For more information on the Sustainable Kamloops Plan, visit: www.city.kamloops.bc.ca/sustainable/index.shtml.

Zoning By-law No. 5-1-2001

A section of the City's Zoning By-law is devoted to zoning agricultural land (A-1). It acknowledges the purpose of the A-1 zone as preserving land designated in the Official Community Plan as "Agricultural/Resource Land" for agriculture and related land extensive uses.

Permitted uses in the Agricultural Zone are limited to the following:

- Agricultural use;
- Boarders or lodgers to a maximum of two persons;
- Single family residential, including pre-manufactured homes and modular homes;
- Sand/gravel extraction rescinded;
- Municipal facilities, including but not limited to, fire halls, public parks and cemeteries;
- Recreation facility - outdoor; and
- Wildlife and waterfowl reserves.

Minimum lot size in the Agricultural Zone is 8 ha with a maximum number of one dwelling unit per property. The Zoning By-law will be updated upon completion of the AAP to ensure consistency.

For more information on the City's Zoning By-law, visit:
www.city.kamloops.bc.ca/development/rezoning.shtml.

Kamloops Social Plan 2008

Food security was identified as a priority social service element of the City's Social Plan. The City's priority responsibility is to recognize and value the concept of food security, through a strong policy framework that recognizes local initiatives and the necessary responsibilities of senior government. The Social Plan is scheduled for review and update in 2013 and will include a more comprehensive urban agriculture component. It will address urban agriculture issues and topics such as community gardens, public produce projects, urban hens, urban bee keeping and spin farming.

For more information on the City's Social Plan, visit www.kamloops.ca/socialdevelopment/socialplan/index.shtml.

ISSUES SUMMARY

A number of issues related to local agriculture have been identified through preliminary public surveys, the Agricultural Advisory committee, and conversations with local producers. Many of the issues are those that are also apparent provincially and, in some cases, are Canada-wide due to changing demographics and economies of scale. These issues, and others uncovered through public engagement opportunities through the AAP process, will be investigated for their applicability in the City's AAP. The Agriculture Advisory Committee has conducted a preliminary review of the issues and has highlighted some as high priorities.

“High priority” is defined as:

- **Municipal Responsibility;**
- **Industry Issue; and**
- **Needs Immediate Attention.**

INDUSTRY VIABILITY

1. Aging Demographics and Generational Transfer Issues

Older farmers want to stay on the farm but are less willing to enter into new agricultural opportunities due to the associated risk. Children of farmers are seeking better employment opportunities off the farm. It is financially difficult for young farmers to enter the agriculture industry. Larger farm sales that do occur often involve transfers where capital was derived from another industry.

2. Taxation and Regulatory Costs

In most non-supply managed agricultural commodities profit margins are minimal. The public & government can have a significant effect on those margins by continually encouraging/imposing regulatory requirements on the industry. Examples include:

- Pricing of resources;
- Land taxes;
- Grazing fees;

- Dam inspection obligations;
- Environmental planning requirements;
- Added costs with the 'go organic' direction;
- Certification costs; and
- Meat inspection costs.

3. Farm Assessment

This process through the BC Assessment Authority attempts to separate rural residential property holders and hobby farms from part-time and commercial farms who are realizing an income from their farm. The required income to qualify for 'farm assessment' is very low and based on a formula used by the BC Assessment Authority. Any agricultural benefits that may include fees, taxes and preferential water rates should only apply to those with legitimate farm assessment.

The farms that have sourced Mexican labourers are typically larger farms. There may be ways that local government and provincial agencies can support their needs with regulatory issues such as approvals for housing and accommodation and working conditions.

4. Labor as a Cost of Production Issue

Most commodities like beef, sheep and horticulture are more prone to market swings and the resulting impacts on farm income. Labour is a major factor in the cost of production and many farmers cannot always find local help at the rate they can afford to pay. A few farms in the region have turned to lower cost seasonal laborers from Mexico.

5. Zoning and By-laws

High
Priority

There are regulations and costs associated with such things as secondary homes and seasonal housing, road-side farm stands secondary uses of agricultural land, rezoning, noise bylaws, use of firearms for predator control, pesticide use, and air quality and burning restrictions. Local farmers should be able to operate on a level playing field with their counterparts in other communities and Regional Districts. Expanding permitted uses in agricultural zones should also be considered to increase the viability of agriculture.

6. Loss of Agriculture Canada Researchers

In recent years, the Kamloops Range Research Station has lost its researchers that provided valuable support mainly to the beef industry. Alternate environmental services have partially replaced the services provided in the past. With the agricultural potential in the Kamloops Region, the Research Station facility is a valuable resource that should not be lost.

7. Lack of Municipal Agency/Committee/Official Designated for the Agriculture Industry



High
Priority

In considering a permanent Agricultural Advisory Committee for Kamloops with regional representation, it should be recognized that the City is the main agricultural center for the broader TNRD. Also included in the TNRD are a number of First Nations with significant agricultural land holdings suitable for agricultural use.

In addition to Kamloops being the agricultural center, there is a need to integrate agricultural issues and opportunities between farmers in the City, the TNRD, and neighbouring Indian bands. Issues cross governance boundaries and joint initiatives are needed to support the industry. As an example, value-added processing will, in most cases be more successful if centralized in Kamloops while support from regional farmers for product supply is essential.

Other issues that need joint discussion/support include meat processing, agri-tourism, bylaw consistency, land and resource security [avoidance of a waterbed effect where urban expansion merely shifts to the TNRD and Tk'emlúps te Secwépemc (TteS)].

SUPPORTING INDUSTRY DIVERSIFICATION

8. Limited Meat Processing Facilities

With the implementation of Full Provincial Meat Inspection in 2007, there are a number of fully licensed processors located in the City and TNRD. More may be needed with industry expansion.

The higher standards required in the new plants has added significantly to the cost of processing. These changes have limited the opportunity for farms to provide locally produced meat products through the retail market (direct sales, restaurants, local food stores).

9. Increased Crop and Livestock Diversity

Kamloops has a long history of agricultural production including the historical hop farms and tomato canneries. Marketing issues changed history, not the physical ability to grow those products plus many more. One relatively recent study, 'Back to the Land' initiated by Kamloops Community Futures explored a range of products that are suited to the areas climate and soils.

10. Non-farm Opportunities:

The ALC should interact with farmers on possible non-farming income opportunities that may be allowed (and compatible) within the ALR. These opportunities may include non-agricultural activities such as: dog kennels, campsites, agri-tourism, farm vacation type programs and certain accommodations. Most landowners are likely not aware of these 'allowable', secondary uses which could support growth of the farming operation.

11. Limited Value-added and Secondary Processing Opportunities

There is an opportunity for more on and off farm food processing, commercial kitchens and secondary processing. Kamloops as a central location has the benefit of being able to draw product for processing from farms within Kamloops and the TNRD.

PROTECTION OF AGRICULTURE RESOURCES (LAND AND WATER)

12. Security of Land and Water Resources

There is increasing pressure/competition on the province's water and land resources. BC is currently updating the Water Act. For Kamloops farmers to invest and prosper they need a secure land base (relatively free from speculation), with appropriate urban and rural interface buffering, and an economical and sustainable source of water.

13. Loss of Larger Ranch Properties with Multiple Titles

It is not uncommon for many larger ranches to hold numerous land titles. When these ranches are sold, it is difficult to find a buyer that can afford all of the titles and thereby retain the integrity of the ranch. These properties become targets for non-agricultural land developments and are often broken up into their individual titles. In many cases the outcome is a ranch where the cows are sold, the range tenures relinquished and the land broken up into a less viable size, hobby farms, resort developments or rural residential estates. There are exceptions to this trend with the ongoing movement of the dairy industry into the Interior; however, the dairy industry is more interested in the higher capability irrigated lands in the valley bottoms compared to grasslands that are more commonly associated with area ranches.

14. Growth of Mining Industry

This is of concern to the ranching industry. The Kamloops Stockmen's Association has been involved with this issue.

15. Maintaining Environmental Sustainability



The success of the agriculture industry relies on the stewardship of the land and water resources they use. These resources are also important habitat for wildlife and fisheries. There are a number of issues and initiatives currently being addressed by the industry such as:

- Noxious weeds (private, Crown, and City) - continued support of the City's weed control initiatives is needed;
- Encouraging the use of best management practices in agriculture including the protection of pollinators;
- Environmental farm plans - encourage voluntary participation;
- Grasslands protection (critically important to wildlife and the ranching sector);
- Ducks Unlimited initiatives (e.g. wetlands);
- Riverbank erosion;
- Range issues related to recreational use;
- All terrain vehicle (ATV) use by public;
- Vandalism;

- Trespassing; and
- Climate change.

Due to global warming, it is predicted that weather throughout BC will generally become warmer year-round, wetter in winter, and drier in summer. The impact of these changes on agricultural production is specific to the various climatic regions. In general, the potential for crop production in this region would likely be increased due to a higher potential for crop yield resulting from more favorable climatic conditions, an expanded range over which some crops can be grown, and the introduction of new, higher-value crops. The degree to which this increased potential for crop production can be realized will be primarily dependent on the availability of water. The predicted climate change will enhance production where crops can be irrigated; however, limitations to the supply of irrigation water may seriously affect productivity. Where irrigation is not feasible, productivity may increase slightly, remain the same, or decrease and would be very sensitive to actual rainfall distributions during the growing season. Considerable areas of land suitable for agricultural production are currently not in use in some regions due to lack of necessary infrastructure and increased costs associated with distant markets. Climate change may increase the land in agricultural production; however, the area currently in production is controlled primarily by economic rather than climatic considerations. Increased demand on existing water supplies from agricultural and non-agricultural users is expected to occur throughout British Columbia.

16. Pressure for Non-agricultural Developments on Agricultural Lands



Developers often focus on agricultural lands due to their lower cost. Resort developments and golf course proposals typically involve a residential component to be viable and as a result the agricultural potential is almost always impacted in a negative way. Care needs to be taken when reviewing such proposals to determine if they are speculator driven or truly have a positive agricultural benefit.

SECURE FOOD SUPPLY AND PUBLIC AWARENESS

The majority of agricultural products produced in the region are typically shipped out for further finishing or sale. This applies to the cattle industry where most calves and yearlings raised in Kamloops are shipped to Alberta for further finishing and eventual return through our retail food stores and restaurants. A few other examples include commodities such as milk, ginseng and other horticultural crops (e.g. potatoes and onions). These farms are often not well known or visited by local consumers but they should be recognized as a critical component to a secure food supply.

Perhaps the most common consumer interface with local farmers is through the Farmers Market. As the demand for locally produced food continues, more producers will have an opportunity to consider direct farm marketing to consumers, restaurants or the retail food stores.

17. Future Direction of the Local Farmers Market

The Kamloops Farmers Market is a long standing tradition with proven success. Questions have arisen through public surveys and discussions with City officials and local producers as to its future:

- What changes does the Association see that could be supported by the City?
- Is there a possibility of a year round market?
- Is there a need for a new venue?
- Are the needs of the consumer being met?
- Are the needs of the vendors being met?

18. Industry Recognition and Support

82% of British Columbians currently reside in urban centers. In addition, 92% of the remaining rural population is not farming. We need to search for ways to improve the public awareness regarding the importance and value of our agriculture industry.

In the public education process, the structure of the local agriculture industry should be described in a way that allows for a full understanding of the industry's scope from farmers markets to commercial agriculture to industrial processing.

19. Education and Support for New Farmers

The Kamloops area has tremendous potential for the production of a wide range of cropping and livestock diversification. With the Kamloops Agriculture Plan and a renewed focus on the industry it should be recognized that there are many potential producers that have limited knowledge about the industry. Education and proper planning is essential for success.

The Market provides an excellent means of consumer education in addition to being able to monitor the needs and views of local consumers.

20. Agricultural or Multi-Purpose Exhibition Center (formerly the KXA)

The social fabric surrounding the agriculture industry is becoming frayed:

- The Provincial Bull Sale has disappeared;
- The KXA is in a state of indetermination; and
- The Provincial Winter Fair must have a permanent home

A vibrant agriculture industry needs these kinds of events that allow for a positive connection with the urban residents of Kamloops.

- What directions can be taken to bring that atmosphere back? Kamloops is an obvious hub.
- Where does the Rayleigh site fit? Can local food production happen here?
- Is the North Thompson Fall Fair and Rodeo in Barriere meeting the industry's/residents' needs?

21. Improving the Urban - Agriculture Interface



High
Priority

Ongoing City support for and public awareness about urban agriculture is necessary to reconnect people with the food they eat therefore giving them a greater appreciation and understanding of farmers and farming operations. In 2013, the City's Social Plan will undergo a major review and update which is anticipated to include a detailed section devoted to urban agriculture.

APPENDIX

APPENDIX 1

June 22, 2011

REPORT TO THE CHIEF ADMINISTRATIVE OFFICER
FROM THE DEVELOPMENT AND ENGINEERING SERVICES DEPARTMENT

ON

AGRICULTURE AREA PLAN

PURPOSE

To seek Council's approval to proceed with the development of an Agriculture Area Plan (AAP).

SUMMARY

Agriculture is historically significant in the City of Kamloops, shaping both its development pattern and its economy. The primary purpose of developing an AAP is to establish updated and more defined policies that will protect and promote agriculture and encourage sustainable agricultural practices.

The recently adopted Sustainable Kamloops Plan suggests ways in which Kamloops can continue to function and grow in a more sustainable manner. Background research was conducted for all aspects of sustainability including land use, growth management, and economic viability. As part of this extensive review, it was determined that the City needed to gain a better understanding on where viable agricultural land exists, on how it should be used or enhanced, and on exploring local increased opportunities for increased food production and processing.

A budget of \$50,000 is available to complete the AAP. \$25,000 was identified in the 2011 budget; \$25,000 has also been secured from the Investment Agriculture Foundation, an industry-led, not-for-profit provincial organization, to develop the plan. The AAP is projected to be completed in the fall of 2012. It is recommended that Council authorize staff to initiate the AAP, authorize the establishment of an Agriculture Advisory Committee, and secure a consultant to assist with the development of the AAP.

RECOMMENDATION:

That Council:

- a) Approve the attached Terms of Reference for an Agriculture Advisory Committee in accordance with Attachment "A";
- b) Designate a Council member to participate on the Agriculture Advisory Committee;
- c) Allocate \$25,000 from the 2011 budget for the development of the Agriculture Area Plan (AAP);

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d) Authorize staff to prepare a Request for Proposal to secure a consultant to assist with the AAP and proceed with the preparation of the AAP.

COUNCIL POLICY

KAMPLAN's goals with regard to agricultural/resource lands are to ensure agricultural lands are preserved for agricultural purposes, enhance the viability of agricultural operations in the City, and discourage urban development into the Agricultural Land Reserve (ALR).

KAMPLAN policies relevant to developing an AAP include the following:

Section 5.2: The City will support the maintenance and enhancement of farming on land designated for Agricultural/Resource use.

Section 5.4: The City will encourage the use and development of private lands within this category for agriculture, including intensive agriculture, or for farming purposes. Single family residential uses on large lots are appropriate, including mobile homes, and ancillary residential uses where necessary for agricultural or for farming purposes. Other uses may include utility installations, municipal facilities including landfills, composting sites, and spray irrigation activities; and open land recreational activities such as hiking and horseback riding trails. The City will consult with the Agricultural Land Commission (ALC) about how it intends to mitigate any negative impacts of open land, recreation, and other non-farm uses on agriculture, for example, fencing, signage, etc.

Section 5.7: The City will discourage subdivision of lands within this category. City utilities and services generally will not be provided to these lands. Where water extensions have been approved, they will be limited to domestic supply only on the basis of one connection per existing lot.

Policies in the Sustainable Kamloops Plan that are relevant to the development of the Plan include:

- Promoting local food security by protecting viable ALR lands in order to safeguard local food production capabilities;
- Increasing knowledge within the community of the environmental, social, health, and financial benefits of locally sourced food supplies; and
- Undertaking the Agriculture Plan in 2011

SUSTAINABILITY IMPLICATIONS

The Sustainable Kamloops Committee identified agriculture and food security as one of the top three priorities that requires attention in Phase 3 and the Sustainable Kamloops Plan recommended the development of an AAP to begin in 2011. The policies and goals in the proposed AAP will ultimately strengthen the economic viability of agricultural land, promote agriculture as a sustainable industry, and identify appropriate uses on the varying classifications of agricultural land. It will also assist in rationalizing existing lands within the ALR. The AAP is necessary to continue to implement the Sustainable Kamloops Plan and strive to meet the goals which include:

- Reducing community-wide GHGs by 40% below 2007 levels by 2020 and reducing transportation related GHGs to 2.4 tonnes/capita by 2020 as more food can be produced locally;
- Ensuring more food is grown locally to respond to climate change impacts elsewhere;
- Increasing the number of active farms within Kamloops;
- Encouraging sustainable economic development;
- Promoting the growth of small business; and
- Continuing to support a well-diversified economy.

DISCUSSION

The valley bottom of Kamloops was once known as being very strong in food production. Agriculture in the region has historically been hard fruit orchards, vegetables, fodder (hay) and livestock operations of beef, sheep, dairy, and horses. The neighbourhoods of Brocklehurst and Valleyview were renowned for their productive fruit orchards. The Tranquille Farm was once considered one of the top experimental farms in BC due to its rich soils, the topography, annual sunlight, and access to water from the Tranquille River. As the city grew and amalgamated, most of the prime valley area was developed for urban growth, leaving the majority of agricultural influences located near the city's periphery and primarily focused on the rearing of livestock and associated uses such as fodder and hay production for cattle and horses. Presently, a local dairy industry serves the region and beyond, and agri-tourism has gained a strong presence in the region as many farms and ranches have diversified to survive. Lately, small scale agricultural productions have been encouraged and marketed through the Farmers' Market and local businesses.

The Local Government Act encourages municipalities to develop policies to maintain and enhance farming activities in areas designated for agriculture use in the Official Community Plan. Several BC municipalities have developed agriculture plans that focus on agriculture and farming. The Ministry of Agriculture and Lands defines an AAP as focusing on a community's farm area to discover practical solutions to issues and identify opportunities to strengthen farming and contribute to agriculture and the community's long-term sustainability.

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While the Agricultural policies within KAMPLAN: An Official Community Plan for Kamloops have been adequate to date, a number of initiatives have highlighted the need to strengthen and enhance these policies including:

- The development of the Sustainable Kamloops Plan, where local food security was among the top three priorities for more research;
- Working with the Agricultural Land Commission (ALC) on land requests and applications, in determining appropriate uses in the ALR and classification of land; and
- The popularity of local and sustainable agriculture, especially when combined with other issues such as greenhouse gas (GHG) reduction, water use, and food security.

The benefits of an AAP include reduced urban/rural conflict, improved local economic activity, consistency with provincial policy and legislation (including that of the ALC), and sustainable communities with balanced economic diversity. Throughout the AAP planning process, the following will be determined:

- The location of all viable agricultural land;
- Strategies to potentially increase sustainable food production;
- Appropriate land uses that can or should be supported on agricultural lands;
- The possibility of creating an agricultural cooperative or shared projects;
- Policies that can make agricultural land more economically viable;
- A scale of productivity and capability based on limitations for agricultural land;
- Agricultural activities that are best suited for classifications of agricultural land; and
- How agriculture can be sustained for the next five to twenty years.

The development of the AAP will occur in two phases: the completion of an agriculture background report and the preparation of the AAP policy document. The background report will determine where all viable agricultural land exists, the level of agricultural potential in Kamloops, and interface issues such as environmental and development pressures. The AAP will identify how agricultural land can be better utilized, what land uses are appropriate, and what strategies can be utilized to create food production sustainability. The AAP will establish a vision, goals, principles, future direction, guidelines, and policies for addressing the future of agricultural land within Kamloops. A breakdown for both planning processes and the timeline can be found in Attachment "B".

Ultimately, the intent is to amend KAMPLAN to support the AAP and ensure consistency with the Sustainable Kamloops Plan. Subsequently, zoning and other by-law amendments could follow the amendment to KAMPLAN adoption to assist the implementation of the AAP.

The Investment Agriculture Foundation (IAF) of BC is an industry-led, not-for-profit organization with a mandate to foster growth and innovation across BC's agriculture industry. The IAF uses federal and provincial funds to support innovative projects that will assist the agriculture industry with innovation, diversification, and growth. The IAF also supports local governments with agricultural initiatives, projects, and planning that will strengthen farming practices. The City of Kamloops has successfully secured \$25,000 in funding from the IAF to complete an AAP, subject to the establishment of an Agriculture Advisory Committee. An important criterion for securing funding from the IAF is the direct involvement of the agriculture community in the planning process of the AAP. As such, it is recommended that municipalities establish an Agriculture Advisory Committee to assist with the development of an AAP.

The following representatives are proposed to sit on the AAP Committee:

- One representative from Council;
- One representative from the Ministry of Agriculture and Lands or the Agricultural Land Commission;
- One representative from the BC Livestock Producers or BC Cattlemen's Association;
- Two representatives from local ranching/farming operations;
- One representative from the Kamloops Farmers' Market Society;
- One representative from the Certified Organic Association of BC;
- Two representatives from the public who have an interest in agriculture; and
- City staff and consultant (non-voting).

The Terms of Reference for the Agriculture Advisory Committee are detailed in Attachment "A". The term of the Committee shall end upon completion of the City of Kamloops AAP.

Consultation Process

The AAP will be developed through extensive consultation with agricultural stakeholders including farmers, agri-industry, development community, government agencies, and the public. The Agriculture Advisory Committee will act as the steering committee throughout the process. It is envisioned that the consultation process will be supported by:

1. An AAP webpage to provide updates regarding the consultation process and development; copies of deliverables (such as the background report) as they become available, and additional opportunities for consultation and feedback;
2. Stakeholder workshops and interviews involving stakeholder groups and prominent agricultural community members; and
3. Neighbourhood meetings to enable residents to provide input about the agricultural areas in which they work and live.

FINANCIAL IMPLICATIONS

In March 2011, the City of Kamloops received \$25,000 from the IAF to prepare an AAP. Another \$25,000 has been allocated in the 2011 budget. A total of \$50,000 is available to retain a consultant for the development of an AAP. In-kind resources will also be provided.

PERSONNEL IMPLICATIONS

Staff from the Planning and Development Division will work alongside a consultant during the preparation of the AAP. Typical in-kind functions will include:

- Working with the Committee and consultant on the background research related to the AAP;
- Organizing and preparing an agenda and minutes for Agriculture Advisory Committee meetings;

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- Coordinating AAP updates to the City of Kamloops website with the Business and Client Services Division;
- Receiving and preparing correspondence on behalf of the Agriculture Advisory Committee; and
- Preparing updates to Council upon request and preparing reports for Council approval and KAMPLAN adoption.

The Sustainable Kamloops Plan interdepartmental working group comprising staff in the Development and Engineering Services, Public Works and Sustainability, and Parks, Recreation and Cultural Services Departments will also work with Planning and Development Division staff and the consultant as the process evolves. Staff from other departments may be called upon as needed.


D. A. Trawin, MCIP, MURP
Development and Engineering Services DirectorApproved for Council Consideration: 

Verbal concurrence: J. Fretz, Sustainability and Environmental Services Manager

Author: L. Proddi, MCIP, Planner

Reviewed by: R. L. Lambright, MCIP, Planning and Development Manager 
LP/lnm/jt

Attachments

APPENDIX 2

Elements of a Food System

Resources	Examples	In Kamloops			
		Lacking	Could be Expanded	Sufficient	Extensive
Plant Resources	Nurseries and propagation centers		X		
	checklists of food that can be grown locally/regionally and non-food species useful for other purposes			X	
	research institutes		X		
	seed banks and exchanges		X		
	demonstration farms and gardens	X			
	teaching centers		X		
	skilled people		X		
	government departments and their resources/regulations			X	
	voluntary agencies			X	
	products and producers regionally processing and preservation		X		

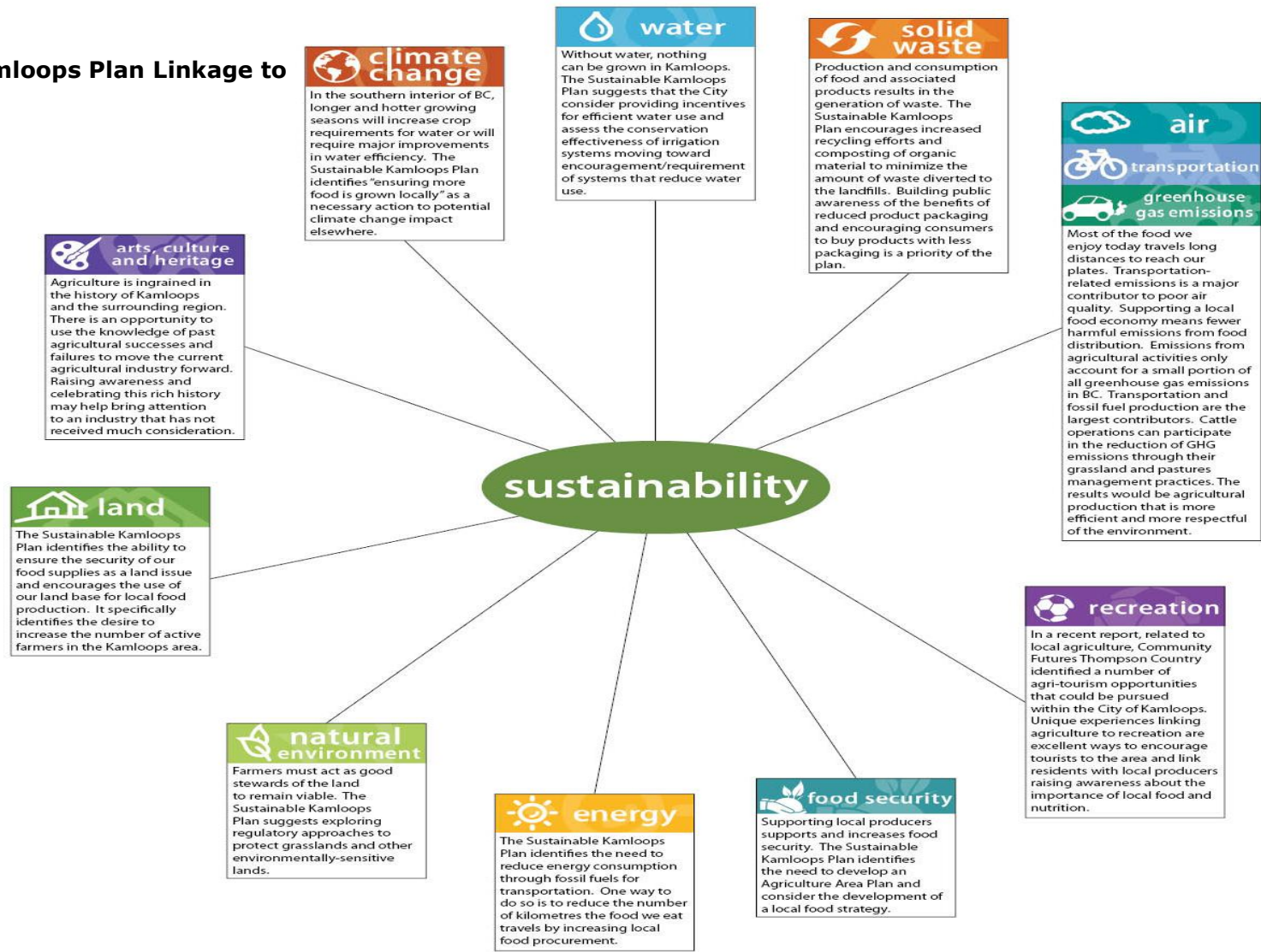
	processed-product producers in the region	X			
Animal Resources	Breeders and stud or propagation centers:				
	Cattle	n/a locally			
	Horses			X	
	useful native species collections and reserves	X			
	potential for cultivation		X		
	Aquatic species		X		
	Demonstration farms	X			
	Free range	X			
	Bee culture		X		
	Teaching centers	X			
	Skilled workers	X			
	Vets/farriers for large animals			X regionally	
Animal Resources (continued)	voluntary agencies and animal protection societies			X	
	contractors and consultants		X		
	publicity		X		

	species and suppliers in the region, livestock haulers, Research Facility (Beef Chair)		X		
Integrated Pest Management (IPM)	Insectaries and invertebrate predator breeders and suppliers of biological controls	X			
	information sources on IPM			X	
	references and libraries	X			
	checklist of common pests and predators		X		
	safe pest control procedures		X		
Processing and Food Preservation	Suppliers of processing equipment		X		
	food processing facilities	X			
	information on sources related to food processing and preservation	X			
	processed-product producers in the region	X			
Markets and Outlets	Local markets		X		
	delivery and distribution	X			
	export markets and wholesalers	X			
	direct marketing		X		
	retail outlets	X			
	roadside and self-pick sales		X		

	market packaging and package suppliers	X			
	annual barter fair	X			
Support Services and Products for Food Production	Food quality control testing services	X			
	water supply services and design/implementation		X		
	suppliers of fertilizers		X		
	mulch soil amendments		X		
	fence suppliers/services		X		
Support Services and Products for Food Production	cattle grids and gates		X		
	farm machinery		X		
	garden and domestic tool suppliers			X	
	repair and contract services		X		
	land planning services			X	
	greenhouses	X			
	food dryers	X			

APPENDIX 3

Sustainable Kamloops Plan Linkage to Agriculture



MAPS

Map 1 - Food Producer Map - City of Kamloops and Area

Map 2 - Remaining Land for Residential Development

Map 3 - Kamloops Farm Properties per BC Assessment

Map 4 - Arable Land Use

Map 5 - Tenure and Crown Land Use

Map 6 - Growing Degree Days Above Zero

Map 7 - Mean Daily Temperature - January

Map 8 - Mean Daily Temperature - July

Map 9 - Plant Hardiness Zones

Map 10 - Provincial Water Licences and Selected Neighbourhood Water Consumption

Map 11 - Census Subdivision: 5933044 (Area P)

Map 12 - Agricultural Land Reserve (Kamloops and Surrounding Area)

Map 13 - Agricultural Land Capability: Dry Classification

Map 14 - Agricultural Land Capability: Improved Classification

REFERENCES

Black Creek Ranch Business Strategies. (2007). *Agriculture Feasibility Analysis*. Kamloops.

Crane Management Consultants Limited. (2000). *Back to the Land - Report 1 - Resource Opportunity Analysis*. Kamloops: Community Futures Thompson Country.

B.C. Ministry of Agriculture and Lands. (n.d.). *B.C.'s Food Self-Reliance: Can B.C.'s Farmers Feed Our Growing Population?* Retrieved September 13, 2012, from <http://www.plancanada.com/BCfood.pdf>

B.C. Association of Cattle Feeders. (2012). Retrieved October 3, 2012, from BC Association of Cattle Feeders: <http://www.bcacf.com/>

Beesley, K. B. (1999). Agricultural land preservation in North America: a review and survey of expert opinion. In *Contested countryside: the rural urban fringe in North America*. (pp. 57-91).

British Columbia Cattlemen's Association. (2012). *BC Beef Cattle Industry*. Retrieved October 10, 2012, from British Columbia Cattlemen's Association: <http://www.cattlemen.bc.ca/industry.htm>

De La Salle, J. (2012). *Agricultural Urbanism: Rethinking our Relationship to Land, Food and the Community*. HB Lanarc.

B.C. Ministry of Agriculture and Lands. (2011). *Growing Knowledge: Land Use Inventory Report for Kamloops*. Abbotsford: Sustainable Resource Management Branch, Ministry of Agriculture.

Ostry, A., Miewald, C., & Beveridge, R. (2011). *Climate Change and Food Security in British Columbia*. Victoria: Pacific Institute for Climate Solutions.

Provincial Agricultural Land Commission (BC). (2012). *About the Agricultural Land Reserve*. Retrieved October 3, 2012, from Agricultural Land Reserve: http://www.alc.gov.bc.ca/alr/alr_main.htm