WESTBANK CENTRE
AGRICULTURE PLAN

WEST KELOWNA

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ACRONYMS

AAFC	Agriculture and Agri-Food Canada
AGRI	BC Ministry of Agriculture
ALC	Agricultural Land Commission
ALR	Agricultural Land Reserve
ARDCorp	Agriculture Research and Development Corporation
BCA	BC Assessment
BCMoE	BC Ministry of Environment
BCMSCD	BC Ministry of Community, Sport, and Cultural Development
BMPs	Best Management Practices
CFIA	Canadian Food Inspection Agency
CLI	Canadian Land Inventory
COCF	Central Okanagan Community Farms
COCG	Central Okanagan Community Gardens
COEDC	Central Okanagan Economic Development Commission
CSA	Community Supported Agriculture
CWK	City of West Kelowna
DPA	Development Permit Area
EDS	Economic Development Strategy
EFP	Environmental Farm Plan
FIRB	Farm Industry Review Board
FPPA	Farm Practices Protection (Right to Farm) Act
GDD	Growing Degree Days
IH	Interior Health
LGA	Local Government Act
OCP	Official Community Plan
RDCO	Regional District of Central Okanagan
RGS	Regional Growth Strategy
WCAP	Westbank Centre Agriculture Plan
ZBL	Zoning Bylaw

EXECUTIVE SUMMARY

The City of West Kelowna (CWK) has identified a portion of privately-owned underutilized Agricultural Land Reserve (ALR) land south of Westbank Centre as having high agricultural and economic potential. Historically, these lands were utilized for a variety of agricultural uses, including fruit orchards and vineyards. Since the late 1990s and early 2000s, the majority of these lands have remained uncultivated. The site totals just under 44 hectares (108 acres), of which approximately 24 hectares (60 acres) are cultivable.

The City retained the services of Upland Agricultural Consulting Ltd and Bench site design inc. to develop the Westbank Centre Agricultural Plan (WCAP): an agricultural feasibility assessment and market opportunities review for up to three crop scenarios on the underutilized parcels. The overall aim is to protect this farmland from non-farm development pressures by discouraging ALR exclusion and non-farm use applications and promoting agricultural uses. The development of the WCAP is envisioned to encourage agri-tourism and agricultural business in the area and the key findings are expected to be transferable to other parcels of unused or underutilized farmland across the CWK.

There were seven key steps involved in developing the WCAP:

1. A background review of the plan area;
2. Determine the opportunities and challenges facing the property owners regarding putting the lands back into agricultural production;
3. Investigate the economic impacts of potential agricultural uses;
4. Consult with the City's Agricultural Advisory Committee (AAC) on the development of recommendations for potential land uses and site-specific agricultural guidelines;
5. Draft a comprehensive action plan outlining different scenarios;
6. Present the proposed scenarios to the community and involved stakeholders; and
7. Compile a final plan with the preferred development scenario(s) identified for the area and an associated implementation plan.

Several regional and municipal policies, plans, and strategies support the objectives of the WCAP. They include:

- Regional District of Central Okanagan (RDCO) Regional Growth Strategy and Agricultural Plan;
- Central Okanagan Economic Development Commission;
- West Kelowna Official Community Plan and Zoning Bylaw;
- West Kelowna Agricultural Plan;
- West Kelowna Economic Development Strategy; and
- Westbank Centre Revitalization Plan.

Key steps in the WCAP methodology included:

- Conducting a review of soils maps, agricultural capability, and zoning;
- Meeting with property owners to interview them and tour their properties (phone calls and emails were offered when face-to-face meetings were not possible);
- Ground-truthing the sites by walking the land to make field observations and take pictures;
- Producing a crop feasibility assessment to explore the top three agricultural scenarios;
- Determining Strengths, Weaknesses, Opportunities, and Threats (SWOT analysis) for the three options;
- Exploring potential tenure arrangement (leases, licences); and
- Making connections with the broader community such as co-operatives, incubator farms, community farms & gardens.

The crop feasibility assessment was conducted using the following parameters and assumptions:

Scenario	Estimated Capital Inputs (Start Up)	Estimated Operating Costs (Annual)	Estimated Gross Revenue (Annual)	Estimated Net Revenue (Gross Rev. - Operating Costs)
1) Cider apples	$1,765,000	$765,000	$3,080,000	$2,315,000
2) Sweet cherries	$436,000	$610,000	$2,250,000	$1,640,000
3) Mixed production	$400,000	$415,000	$1,720,000	$1,300,000

- All permitted uses as determined by the Agricultural Land Commission to be allowed on the ALR were considered;
- This list was filtered through soils and climate capability data to come up with a list of preferred crops;
- The relative costs of start-up and return on investment were calculated;
- The ability to connect to agri-tourism and direct market sales opportunities were considered; and
- An overall suitability ranking was allotted.

The top ranking crop scenarios based on this methodology were cider applies, sweet cherries and mixed production (Figure 1). Each scenario includes space allotted for honeybees and other pollinators, and a small amount of space (0.5 acres) for community garden plots. Additional attributes of the three scenarios are summarized in a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis table:

The WCAP also includes a chapter on what elements may be included in a Westbank Centre food hub, which could be co-located alongside the farming operation(s).

Scenario	Strengths	Weaknesses	Opportunities	Threats
1) Cider apples	Great growing location (soil and climate) and high quality inputs (BC apples). Young industry, entrepreneurial mindset. Existence of local wineries (wine trail). Highest rate of return of the three scenarios.	Unpredictable supply chain (may not have enough cider apples during first few years). Lack of local processing, bottling (will need to be contained on site). Most capital intensive start-up costs.	The demand for cider is strong and rapidly growing. Increasing interest in local foods and food products.	Competition from local wineries for visitors. High taxes related to GST, PST, and alcohol. Lots of permitting and licensing requirements.
2) Sweet cherries	Growing industry. High quality cherries grown locally. Lack of local cherry orchards for locals to visit and buy from the farm gate. Support from the BC Fruit Growers Association.	Will take 5 years for cherry trees to mature. Dependence on export market can be risky.	Can take advantage of a new export market (China). New local processing facilities in the Central Okanagan. Tree fruit replant program from the BC government may offer financial support. Canning (jams) and production of goods (pies, ice cream) could be co-located on site.	Competition from other new cherry orchards coming into production to take advantage of new export markets.
3) Mixed production	Many of the proposed crops do not require an overly high level of input costs. Soil and climate is suited to a wide ranges of crops. Proximity to market (residential buildings nearby) may translate into high farm gate sales. Most crops will not take long to mature.	Some of the proposed crops are not grown much locally in the Central Okanagan (particularly blueberries). Overall rate of return will be lower than for orchard production.	May be able to partner with local community garden groups and offer garden plots for rent. Lots of value-added product opportunities as a result of producing a range of crops. Potential to offer U-picks and other agri-tourism events.	Lack of processing facilities in the area for blueberries. Locals may not be accustomed to buying berries, herbs, and vegetables locally. May take extra marketing efforts.

The opportunities for direct sales (U-Pick, farm gate, and Community Supported Agriculture) are highlighted and the benefits of providing on-site small-scale processing and distribution facilities are discussed. A food hub can also be used as a unique way of fostering community partnerships. The agricultural development of Westbank Centre could provide an opportunity to partner with local schools, the Central Okanagan Community Gardens society, and other local organizations to extend the benefits of growing local foods out into the greater community.

The final section of the WCAP provides an overview of land use tenure options, specifically the benefits of obtaining Farm class status through BC Assessment, different types of tenure arrangements, the benefits of long term leasing for agricultural tenants, and alternative farming models (co-operatives, incubator farms, and community farms). An implementation strategy rounds out the Plan to ensure that the momentum following the development of the WCAP can be used to encourage agricultural development within the community in the short, medium, and long term.

Based on soil, water, and climate the diversity of what can be cultivated in Westbank Centre should not be underestimated. What is impeding production is a combination of lack of private investment in agriculture and challenges for those with skills in agriculture to be able to access affordable land. There is an incredible opportunity for Westbank Centre to become an agricultural jewel of West Kelowna and to capitalize on the number of visitors seeking agricultural tourism experiences in the region. However, in order for this plan to be realized, investment is required and leadership amongst the current property owners will be key. In order for a cidery, cherry orchard, or mixed farm to become a reality, long term lease agreements will need to be signed with farmers or the land will need to be sold at a fair agricultural value.

01 INTRODUCTION

The City of West Kelowna (CWK) was incorporated in 2007 and is a member of the Regional District of Central Okanagan (RDCO). The City has a population approaching 35,000 on approximately 13,000 hectares of the west side of Okanagan Lake. The communities of the City include Casa Loma, Gellatly Bay, Glenrosa, Lakeview Heights, Mission Hill/Sunnyside, Rose Valley/West Kelowna Estates, Shannon Lake, Smith Creek, and Westbank Centre. The City of West Kelowna surrounds two self-governing reserves of the Westbank First Nation.

1.1 SCOPE AND INTENT OF THE WESTBANK CENTRE AGRICULTURE PLAN

The CWK has identified a portion of underutilized Agricultural Land Reserve (ALR) land south of Westbank Centre as having high agricultural and economic potential. The City aims to protect this farmland from development pressures by discouraging ALR exclusion applications and promoting agricultural uses. The intent is to meet several goals related to agriculture and food security that are stated within the Westbank Centre Revitalization Plan, the West Kelowna

Figure 1. SIte context. Study area is shown in red.

Economic Development Strategy (2010), and the West Kelowna Agricultural Plan (2011). The development of a Westbank Centre Agricultural Plan (WCAP) is listed as a priority in Council's 2015 Strategic Plan and is envisioned to encourage agri-tourism and agricultural business in the area. The key findings of this plan are expected to be transferable to other parcels of unused or underutilized farmland in other communities in the City of West Kelowna.

1.2 STUDY SITE LOCATION

The study site includes eight ALR parcels situated to the south of Westbank Centre that currently have minimal or no agricultural activities occurring. These parcels are located on the east and west sides of Brown Road, with frontages onto Brown, Harding, and Cindy Roads. The lands immediately north, east, and south are utilized for residential purposes, while Glen Canyon Regional Park borders these lands to the west. Situated just further north are a variety of commercial, residential, and institutional uses that comprise Westbank Centre, as well as Highway 97. Gellatly Bay is located just southeast of the site

Historically, these lands were utilized for a variety of agricultural uses, including fruit orchards and vineyards. Since the late 1990s and early 2000s, the majority of these lands have remained uncultivated.

02 GENERAL CONTEXT REVIEW

2.1 OVERVIEW OF WESTBANK CENTRE

Westbank Centre is located at the heart of the City of West Kelowna, west of Mt. Boucherie and north of Gellatly Bay. Historically, Westbank Centre, and particularly Main Street, was the social and commercial hub of the West Kelowna area. However, under the jurisdiction of the Ministry of Transportation, the widening of Main Street in the mid-1980s, the construction of the Coquihalla Connector (Highway 97C), and the construction of the Highway 97 couplet, changed the once vibrant town centre[1]. As such, Westbank Centre is currently the focus of revitalization initiatives and is an integral component of West Kelowna's heritage.

2.2 FARMLAND IN THE CITY OF WEST KELOWNA

CWK has over 1,400 hectares (about 3,500 acres) of A1-zoned land for agriculture, most of it in the ALR[2]. This A1-zoned land represents approximately 11% of the City's land base, 9% of which is in the ALR. There are an additional 3,000 hectares of land zoned to accommodate some form of agriculture, but it is mostly excluded from the ALR. Lying within the zones of RU1 to RU5, some of this land has agricultural uses and more could be developed for agriculture if land owners chose to do so.

Agricultural operations within CWK's farmlands usually involve pasture and forage, tree fruits, vineyards and wineries, nurseries, and to a modest extent, livestock. Approximately 127 hectares (314 acres) of CWK land is used for grape production, including permanent buildings for wine production and retail sales. The main tree fruits (apples, cherries, pears, and plums) are grown on about the same number of hectares as for pasture and forage (130 hectares).

2.3 FARMING: LOCAL HISTORICAL CONTEXT

Agriculture has always been an important industry within the Westbank area. The first settlers in what became the City of West Kelowna were the Allison family, in 1870. Their home is still a community heritage feature in the Lakeview Heights/ Sunnyside neighbourhood[3]. By 1900, improved irrigation practices coincided with a growing demand for farm products for the Klondike Gold Rush and the Similkameen mines. As orchards expanded, support facilities such as packinghouses, processing plants, and sawmills to build fruit crates. The first load of fruit was shipped from the Okanagan Valley in 1903, and from that time, shipments continued to increase until annual production was over a million boxes by 1911. By 1922, the production of apples was over 2.7 million boxes and by 1939, it had increased to over 5.5 million boxes[4]. Viticulture first became important in the 1920s and production quickly increased. Historically, important vegetable crops included tomatoes, cucumbers, cantaloupes, onions, and celery. The orchard industry, coupled with secondary industries, played a key role in creating an employment base for the area's constantly expanding population. Development of the Lakeview and Westbank Irrigation Districts as key water providers within the community provided further support to the agricultural industry[5]. Co-operative marketing began in 1908, and by 1923 the Okanagan Valley supplied 82% of the apples consumed on the prairie market through the co-op[6]. The BC Tree Fruits Ltd, controlled by the BC Fruit Growers' Association, was established during that time.

[1] Westbank Centre Revitalization Plan, 2011. http://www.districtofwestkelowna.ca/DocumentCenter/View/1611
[2] West Kelowna Agricultural Plan, 2011. http://www.districtofwestkelowna.ca/DocumentCenter/View/1300
[3] City of West Kelowna Official Community Plan, 2011. http://www.districtofwestkelowna.ca/232/Official-Community-Plan-Bylaw-No-0100
[4] Kelley, C.C. and R.H. Spilsbury, 1949. Soil Survey of the Okanagan and Similkameen Valleys, BC. Report #3 of the British Columbia Survey. http://sis.agr.gc.ca/cansis/publications/surveys/bc/bc3/bc3_report.pdf
[5] West Kelowna Agricultural Plan, 2011. http://www.districtofwestkelowna.ca/DocumentCenter/View/1300
[6] Kelley, C.C. and R.H. Spilsbury, 1949. Soil Survey of the Okanagan and Similkameen Valleys, BC. Report #3 of the British Columbia Survey. http://sis.agr.gc.ca/cansis/publications/surveys/bc/bc3/bc3_report.pdf

03 POLICY CONTEXT

Agricultural land and associated uses are regulated by several levels of government. As a result, local producers may be subject to municipal, regional, provincial, and federal government policies. Furthermore, agricultural production is not an issue addressed by one department, one piece of legislation, or single level of government. Some regulations are wide in scope and far-reaching, such as national and international trade agreements, while others are site-specific or issue-specific, such as zoning or meat processing regulations. As a result, no one piece of legislation has the capacity to address agricultural issues in an integrated and holistic manner.

This section summarizes some of the more influential policies and regulations. A more complete list is provided in the Appendix and a fulsome discussion is provided in Deborah Curran's Agricultural Legal & Policy Scan (2009)[7].

3.1 FEDERAL POLICIES AND PROGRAMS

Strategic Initiatives

Growing Forward 2 is a partnership between the federal and provincial levels of government and is designed to help the agricultural industry position itself to respond to future opportunities and to realize its full potential as a significant contributor to the economy. An estimated $427 million is being invested in BC through *Growing Forward 2* from 2013 to 2018.

Canada Agricultural Products Act

The *Canada Agricultural Products Act* regulates the import, export, and inter-provincial trade and marketing of agricultural products. The Canadian Food Inspection Agency (CFIA) administers many of the agricultural import and export activities. This Act standardizes agricultural grading and inspecting procedures across Canada.

[7] Curran, D. 2009. Capital Regional District Agricultural Legal & Policy Scan. https://www.crd.bc.ca/docs/default-source/crd-document-library/committeedocuments/planningtransportationandprotectiveservicescommittee/20090515/agenda-item-5---attachment-1-(second-paper)R.pdf?sfvrsn=0

Additional Federal Legislation Affecting Agriculture

Additional federal legislation that influences various aspects of the agriculture industry include:

- *Fertilizers Act*
- *Canada Wildlife Act*
- *Fisheries Act*
- *Consumer Packaging and Labelling Act*
- *Food and Drugs Act*
- *Excise Tax Act*
- *Excise and Import Permits Act*
- *Pest Control Products Act*
- *Farm Debt Mediation Act*
- *Plant Protection Act*
- *Seeds Act*
- *Farm Products Agencies Act*
- *Species at Risk Act*

3.2 PROVINCIAL POLICIES AND PROGRAMS

Strategic Initiatives

In 2008, the BC Ministry of Agriculture released a BC Agriculture Plan for the province entitled *Growing a Healthy Future for BC Families*. The plan outlined 23 strategies to sustain and facilitate the growth and diversification of the agriculture industry. The 2012 BC Jobs Plan *Agr-ifoods Strategy* builds on the initiatives undertaken through the BC Agriculture Plan by setting priorities and actions to guide the growth of the agricultural sector over a five year period in three key areas:

1. Focus on high-quality, high-value products;
2. Expand domestic and international markets; and
3. Enhance the agri-food sector's competitiveness.

In 2012, the Province also provided a $2 million investment in a Buy Local program to help agricultural industries and retail operations promote BC foods. The funding assisted local businesses and organizations to launch or expand their marketing campaigns, including the farmers markets and several regional agricultural producer associations.

The BC Tree Fruit Replant Program, announced in November 2014, provides financial help for growers to replace fruit trees with varieties that will meet consumer demands for high-value, high-quality BC fruit. The BC government has committed $8.4 million towards this seven-year replant project between 2015 and 2021.

Most recently, in 2015, the Province released the *BC Agrifood and Sea Food Strategic Growth Plan*. The plan recognizes three key challenges and opportunities: achieving economic growth, adapting to climate change, and maintaining food supply security. The Plan aims to harness these opportunities and position the agri-food and seafood sector for continued future growth. The Plan provides direction for economic growth with a new, ambitious goal to increase the sector's annual revenues to $15 billion per year by 2020.

Agricultural Land Commission Act

Up to the 1970s nearly 6,000 hectares of prime agricultural land were lost each year to urban and other uses in BC. The Provincial government responded by introducing BC's *Land Commission Act* on April 18, 1973. The Agricultural Land Commission (ALC) was created with the following mandate:

- To preserve agricultural land;
- To encourage farming on agricultural land in collaboration with other communities of interest;
- To encourage local governments, first nations, the provincial government and its agents to enable and accommodate farm use of agricultural land and uses compatible with agriculture in their plans, bylaws, and policies.

The ALC administers the *ALC Act* and is responsible for the ALR, a provincial zone in which agriculture is recognized as the priority use. The purpose of the ALR is to ensure that the province's agricultural land base is preserved and available for farm uses both now and in the future. The *ALC Act* takes precedence over, but does not replace, other legislation and bylaws that may apply to the ALR. Local and regional governments, as well as other Provincial agencies, are expected to plan in accordance with the Provincial policy of preserving agricultural land.

On March 27, 2014, the Provincial government introduced Bill 24 - *Agricultural Land Commission Amendment Act*. The Bill subsequently passed on May 14, 2014 creating two ALR zones, six regional panels and incorporating changes to ALC governance. The Okanagan remains in Zone 1, which maintains the same priorities for decision-making regarding exclusion, non-farm use, and subdivision applications, but will do so by a three-person regional panel.

Agricultural Land Reserve Use, Subdivision and Procedure Regulation

The *Agricultural Land Reserve Use, Subdivision and Procedure Regulation*, adopted in 2002, specifies permitted land uses within the ALR. This regulation identifies farm activities and other, non-farm uses permitted in the ALR, notification requirements for soil removal and placement of fill, procedures for submitting applications, and filing requirements. Land use activities not included in the *Regulation*, such as subdividing land, building additional residences, or excluding land from the ALR, require approval by the ALC through the application process.

New regulations for the *ALR Act*, as directed by Bill 24, were released in mid-2015. The majority of the changes are related to the ability to process farm items in the ALR (a co-operative model is now permitted), the establishment of breweries and meaderies as a permitted use, the permitted production of marijuana, and clarifying the allowance of secondary suites and secondary dwellings in Zone 1 and Zone 2.

Farm Practices Protection Act

The *Farm Practices Protection (Right to Farm) Act* was passed in 1996. The intent of the Act is to protect farms, using "normal farm practices", from unwarranted nuisance complaints involving dust, odour, noise, and other disturbances. The Farm Practices Board, now called the Farm Industry Review Board (FIRB), was established to deal with complaints that arise from the Act and to determine whether the issue results from normal farm practices. The FPPA protects farms both in and outside of the ALR, although those outside the ALR must obtain Class 9 (Farm) status from BC Assessment.

BC Assessment Act

Section 23 of the *Assessment Act* and BC Reg 411/95, the *Classification of Land as a Farm Regulation* (the "Farm Class Regulation"), set out the requirements that must be met for land to be classified as "Farm" for assessment and tax purposes. Land classified as "Farm" must be used all or in part for primary agricultural production.

BC Environmental Farm Plan Program

The Canada-BC Environmental Farm Plan (EFP) Program is a voluntary program that assists farmers in developing an environmental action plan for their farm that enhances natural resources and reduces the possibility of accidental harm to soil, air, water and biodiversity values. Those who enroll in the program become eligible for cost-share funding for certain on-farm Best Management Practices projects through the Growing Forward ARDCorp program.

3.3 REGIONAL AND LOCAL POLICIES AND PROGRAMS

The manner in which agriculture is considered at the policy level is through the Local Government Act (LGA), Regional Growth Strategy (RGS) of RDCO, and the Official Community Plan (OCP) of the City of West Kelowna, and subsequently

through regulations in the zoning bylaws. These documents are critical to the way in which local governments can support local food production and increase farm viability. Both the RGS/RSS and OCP provide long-term visions and strategies for future land use, development, and servicing, among other areas regulated by the LGA. The OCP bylaw is required to contain a Regional Context Statement, which describes how the policies are aligned with the RGS. The zoning bylaw regulates and permits uses within these land uses, or zones, representing current land use. Both the OCP and the zoning bylaw are described in greater detail below.

3.3.1 RDCO AGRICULTURAL PROGRAMS AND STRATEGIES

RDCO's Regional Growth Strategy (Bylaw 1336)

The RGS was adopted in 2014. Several policies within the RGS support the overall goal of the Westbank Agricultural Plan. These include:

- RGS Policy 3.2.1.8: Support the protection of ALR lands and land uses which are supportive and/or complimentary to agricultural use.
- RGS Policy 3.2.5.2: Preserve and support sustainable agricultural activities and land base that enhances local agriculture through the strengthening of best practices, support of local and regional food systems, and the expansion of local food markets and agri-tourism.
- RGS Policy 3.2.5.6: Promote the use of agriculture and ALR lands for food production and ancillary agriculture processing and retailing consistent with uses outlined in the ALC Act and Regulation.

RDCO's Agricultural Plan

The RDCO also has completed an *Agricultural Plan* (2005)[8]. While the plan is now somewhat dated, and was developed prior to the creation of the City of West Kelowna, there are some recommendations in the plan that are still relevant. They include:

- Encourage increased cooperation with the other local governments, Chambers of Commerce, and Business Associations in the promotion and support of agricultural activity in the region.
- Recognize the importance of local markets and assist farmers with opportunities to identify the unique local niche markets that may be largely sustained by local production. Potential local markets, for example, may include organic farming.
- Consider options for promoting interest in a region-wide Economic Development Strategy.
- Encourage the continuation of agricultural support programs, including the Orchard Replant Program directed at re-establishing inactive agricultural areas in the region.
- Continue efforts to enhance agri-tourism and related heritage, cultural and active recreation opportunities toward a comprehensive visitor market in which the agricultural base of the community continues to play an essential role.

Central Okanagan Economic Development Commission (COEDC)

The COEDC The Central Okanagan Economic Development Commission (COEDC) is an agency of the RDCO. The goal of the COEDC is to assist existing and growing businesses with enhancement of related activities and programs to address needs and challenges, attract new investment into the marketplace, and address larger policy and infrastructure issues in order to allow the region to meet its economic potential.

The COEDC identifies agriculture as an important industry in the region and has set up an Agricultural Support Program

[8] Regional District of Central Okanagan Agricultural Plan, 2005. http://www.regionaldistrict.com/media/19873/Final%20Ag%20Plan%20June%202005%20text.pdf

to provide one-on-one assistance to agriculture-related businesses and connects businesses with promotion and marketing opportunities[9]. The COEDC also released the *Region's first Economic Profile for Agriculture* aimed at supporting new and existing agricultural land owners in the Central Okanagan by providing access to a wide range of essential information and quick links to key resources.

3.3.2 CITY OF WEST KELOWNA OCP AND ZONING

The CWK Official Community Plan identifies the desire to "protect and enhance agriculture" as one of its guiding principles. The associated Growth Management Designation maps identify the Westbank Agricultural Plan study area as an Agricultural Precinct, where the objectives are to:

- Conserve and enhance agriculture in West Kelowna.
- Investigate opportunities to minimize urban-agricultural conflicts that do not impact farm operations.
- Ensure residential forms and densities that are compatible with working agricultural operations.
- Promote secondary and tertiary farm activities (e.g. agri-tourism) that contribute to local economic development.

Agricultural Precinct policies include:

- Seek to maintain agricultural lands and uses within Agricultural Precincts that possess significant agricultural value through tools such as covenants, land trusts and/or zoning.
- For land adjacent to the ALR or agriculturally-zoned land, at time of subdivision, zoning, or development, CWK may require the registration of a covenant advising existing and future land owners that their property is adjacent to agricultural land which is subject to normal farm practices protected under the Provincial *Farm Practices Protection (Right to Farm) Act*. The covenant can restrict the use of pest control, weed control, and certain species of plants as outlined in the General Guidelines for all Development Permits.
- Strive to *buffer* rural and agricultural lands from adjacent urban residential development as part of development and subdivision proposals, where appropriate.
- Consider uses that are complementary to agricultural uses as a transition between existing urban development and farm operations, which may include uses such as alley cropping, trails, pathways, and natural areas. Consideration of such uses should not be construed as support for subdivision to smaller parcels.

Agricultural Precinct actions include:

- As part of an Agricultural Plan for CWK, develop guidelines for new growth and development in Agricultural Precincts to ensure the resiliency of agriculture and agri-tourism is preserved and enhanced.
- Develop appropriate regulations and guidelines for "intensive agriculture" in consultation with farmers and other stakeholders to minimize the impact of such activities on residential and agricultural neighbours.

The parcels are within the ALR and the majority are zoned A1 by the CWK. The purpose of the A1 zones is to accommodate agricultural operations and related activities located on parcels that are typically within the ALR. Principal Uses, Buildings and Structures within the A1 zone include:

a. Agriculture, general
b. Agriculture, intensive
c. Kennels, service on parcels 4 ha or greater
d. Greenhouse or plant nursery
e. Mobile home
f. Modular home

[9] COEDC Programs and Services: Agriculture. http://www.investkelowna.com/agriculture

g. Riding stable
h. Single detached dwelling
i. Winery or cidery (proposed changes would also include: brewery, distillery, or meadery)

Secondary Uses, Buildings and Structures within the A1 zone include:

- Accessory uses, buildings and structures
- Agricultural worker dwelling
- Agricultural worker dwelling, temporary
- Agri-tourism
- Agri-tourism accommodation
- Bed and breakfast
- Care facility, minor
- Carriage house
- Home based business, major
- Kennels, hobby
- Portable saw mill or shake mill
- Retail sales of farm products or processed farm products
- Secondary suite

Agri-tourism accommodation regulations ensures that the potential scale and size of the building structure is aligned with the intent of the bylaw (i.e. permitted within a single family dwelling, secondary to the primary agricultural operation). Currently, agri-tourism accommodation is permitted on A1 (Agricultural) zoned land, provided that:

- It is conducted within a principal single detached dwelling (s. 3.20.1);
- The maximum amount of guest rooms does not exceed ten (10) for parcels larger than 3.8 hectares (9.4 acres) and four (4) for parcels less than 3.8 hectares (9.4 acres) (s. 3.20.4); and
- Accommodation is only rented for periods less than 1 month (s. 3.20.3).

CWK council is considering making changes to the agri-tourism accommodation regulations that would add the following requirements:

- For parcels equal to or greater than 2.0 hectares (4.9 acres) and less than 7.6 hectares (18.8 acres) the total gross floor area of guest rooms in an agri-tourism accommodation facility shall not exceed 120 m^2 (1,292 ft^2); a separate or ensuite washroom and common areas are not included as part of the area of the guest rooms.
- For parcels greater than 7.6 hectares (18.8 acres) the total gross floor area of guest rooms in an agri-tourism accommodation facility shall not exceed 300 m^2 (3,230 ft^2); a separate or ensuite washroom and common areas are not included as part of the area of the guest rooms.
- Agri-tourism accommodation is not permitted on parcels less than 2.0 hectares (4.9 acres).

The proposed gross floor area is reflective of the previous Zoning Bylaw (no. 871) which limited the guest room size to 30 m^2. Upon consultation with the AAC, the Committee advised that while they were supportive of controlling the size of such facilities, it was suggested that rather than limiting the size of an individual room, the bylaw should limit the size of the entire facility. This would ensure that some flexibility is afforded to the operator, who may wish, for example, to have either 5 larger guest rooms or 10 smaller guest rooms.

3.3.3 WEST KELOWNA AGRICULTURAL PLAN

The West Kelowna Agricultural Plan, developed in 2011, provides a number of recommendations that serve to support the development of the Westbank Centre Agriculture Plan[10]. The following statement regarding Westbank Centre is included in the Agricultural Plan (Section 3.2.5):

> *The areas surrounding the Westbank Centre study area contains a significant amount of agriculturally viable land, the urban/agricultural interface is both a challenge and an opportunity. The ALR and*

[10] West Kelowna Agricultural Plan, 2011. http://www.districtofwestkelowna.ca/DocumentCenter/View/1300

other agricultural lands in the area are viewed as an opportunity, not a constraint, and exclusion applications are not to be considered as part of the Westbank Centre Plan.

Agriculture forms part of Westbank's unique character and heritage, and can help create economic development opportunities. The Westbank Centre Revitalization Plan will identify agricultural opportunities that will enhance the vitality and sense of place of Westbank. This may include aesthetic, visual, and heritage considerations, agritourism opportunities, and farmers' markets as selling features and tourist attractions.

Specific recommendations, objectives, and policies within the West Kelowna Agricultural Plan that relate to the goals of the Westbank Centre Agriculture Plan include:

Recommendation 9: Agriculture and Urban Growth

- Objective: To integrate agriculture and residential development which can assist in developing pedestrian-oriented communities and support additional agricultural endeavours.
- Policies: The CWK supports secondary and tertiary activities that contribute to farming income (farmers markets, agritourism, secondary processing and others); The CWK continues to encourage community food access opportunities, new techniques for assimilating agriculture into the urban experience, the wholesaling and retailing of horticultural plants and related gardening items, and agritourism and on-farm product sales; Working in consultation with land owners and the Ministry of Agriculture, the CWK continues to encourage agricultural production on lands zoned to accommodate agriculture outside urban centres, while promoting Agricultural Urbanism philosophies only on lands zoned to accommodate agriculture adjacent to or within urban centres.

Recommendation 14: Markets for Local Products and Services

- Objective: To support and encourage local agricultural production by providing local farmers' markets and other approaches within the jurisdiction of the District.
- Policy: The CWK encourages innovative farming and local marketing techniques which help improve the economic viability of food production in the community.

Recommendation 16: Agri-Tourism and Culinary Tourism

- Objective: To support the expansion of the agricultural industry in areas related to agri-tourism and culinary tourism.
- Policies: The CWK encourages activities that contribute to farming income such as agri-tourism and culinary tourism; The CWK encourages the efforts of neighbouring municipalities and the Regional District to foster agri-tourism and culinary tourism in the area; The CWK considers applications by farmers to erect directional signage to agri-tourism and culinary tourism sites as per Hwy Regulations and relevant District Bylaws.

3.3.4 WESTBANK CENTRE REVITALIZATION PLAN

The Westbank Centre Revitalization Plan recognizes Westbank as the cultural, civic and social heart of West Kelowna[11]. The plan's objectives include expanding the economic base, improving the quality of public and private spaces and preserving, protecting and enhancing the area's urban and agricultural culture and heritage, while creating an exciting place to live, work and play. The areas surrounding the Westbank Centre Revitalization study area includes the Westbank Centre Agricultural Plan parcels, which are noted as containing a significant amount of agriculturally viable land. The ALR and other agricultural lands in the area are viewed as

[11] Westbank Centre Revitalization Plan, 2011. http://www.districtofwestkelowna.ca/DocumentCenter/View/1611

an opportunity, not a constraint, and exclusion applications are not to be considered as part of the Westbank Centre Revitalization Plan.

Principle #5 of the Revitalization Plan is to:

> *Celebrate and reference the areas agricultural history in the design of buildings, open spaces and public art, through activities such as demonstration farming, processing, and tailgate sales at the urban agricultural interface at the edge of the centre, and through activities such as farmers markets and community gardening.*

Agriculture is noted as having formed part of Westbank's unique character and heritage, and can help create economic development opportunities. The Westbank Centre Revitalization Plan identifies agricultural opportunities that will enhance the vitality and sense of place of Westbank. This may include aesthetic, visual, and heritage considerations, agritourism opportunities, and farmers' markets as selling features and tourist attractions.

The Revitalization Plan includes a detailed implementation strategy - a list of action items - that highlights bylaw amendments, future policy developments, and capital projects. Two of the goals speak directly to this Westbank Centre Agricultural Plan:

- Protect the agricultural land and enhance its economic and cultural value to WBC by foregrounding the character of agricultural uses and forms in the centre; and
- Commit to protecting the land and work with owners and farmers to get agricultural production underway for economic and 'town character and experience' reasons.

3.3.5 WEST KELOWNA ECONOMIC DEVELOPMENT STRATEGY

The Economic Development Strategy was presented to Council in 2010[12]. Four of the six goals of the EDS relate to the Westbank Centre Agricultural Plan, including:

- Local job opportunities;
- Expanded business tax base; and
- Value-added products and services.

The EDS includes nine strategies recommended for implementation which are expected to contribute to the goals. The recommendations that overlap with the Westbank Centre Agricultural Plan include:

a. The creation of a business development guide;
b. The completion of a building and land inventory;
c. The expansion of tourism services; and
d. The development of the Town Centre.

3.4 TRANSPORTATION AND ACCESS PLANNING AND INITIATIVES

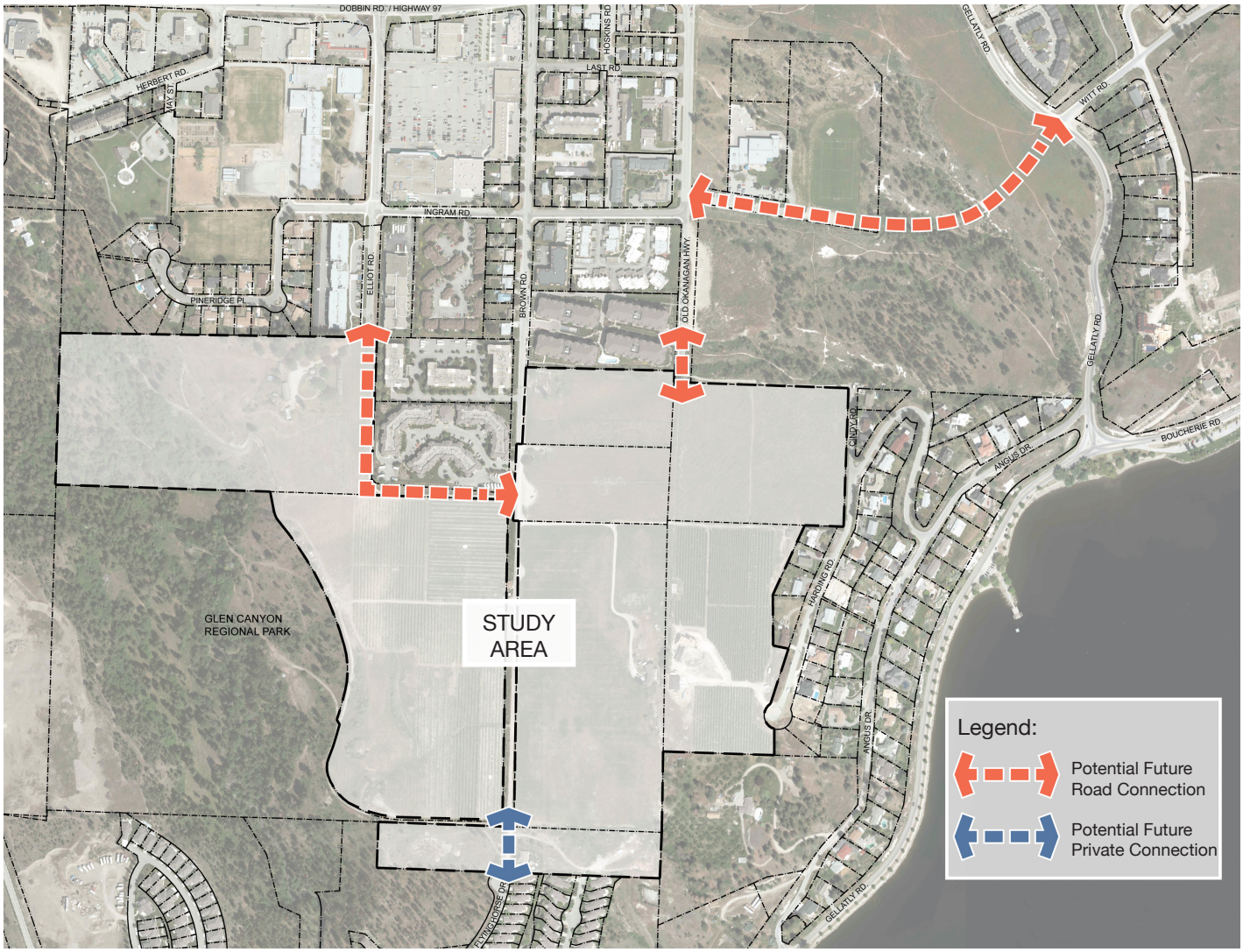
The City's Master Transportation Plan identifies a desire for possible urban collector routes connecting Westbank Centre to Gellatly Road and the waterfront. However, the alignment of these connections has not been determined, although an extension of Ingram Road through to Gellatly Road in partnership with Westbank First Nation appears to be the most topographically feasible. The 2016 10-year capital plan identifies the completion of a transportation study for this connection in 2019.

A connection between Elliot Road and the portion of Brown Road that parallels Ingram Road is expected once the non-agricultural property at 3898 Brown Road separating these roads is developed. Road reserves exist on these properties in anticipation of the future connection. Additionally, a 38 meter extension south of Old Okanagan Highway would

[12] West Kelowna Economic Development Strategy, 2010. http://www.districtofwestkelowna.ca/DocumentCenter/View/1781

provide a City centre connection to 3870 Harding. This extension is currently a non-standard road width that has yet to be constructed. Construction of this extension would be the responsibility of the property owner. Finally, there may be an opportunity to create a connection between the privately owned Flying Horse Drive at the north end of The Pointe development to Brown Road for the residents of the Pointe to access these agricultural lands and Westbank Centre. These potential road network improvements are illustrated on Figure 2.

Figure 2. Potential road network improvement map in relation to the study site



04 ENVIRONMENTAL CONTEXT

4.1 IRRIGATION AND WATER SERVICING

Water is an essential requirement for agriculture, and the industry is most vulnerable to persistent drought. Without supplemental water, natural precipitation will provide an average of only about 300 mm of moisture in a given year. Producing crops such as tree fruits or hay may require 600 to 750 mm of moisture during the growing season[13]. Although the agricultural industry in the Okanagan is a major consumer of water, agricultural users are relatively efficient when compared with other consumers such as golf courses, parks, and domestic landscaping.

The Westbank Irrigation District (now referred to as the Westbank Water Service Area) draws water from a collection of upland watersheds. The Westbank Irrigation District was established in 1922 and derives its supply of water from the Powers Creek Watershed[14], which includes six upland storage reservoirs: Lambly, Jackpine, Horseshoe, Paynter, Dobbin, and Tadpole Lakes. The Westbank Water Service Area serves approximately 385 hectares of farmland, 5,400 service connections, and a population of about 13,000 people[15]. In the Westbank Irrigation District, about 20% of the annual demand is for agriculture[16].

The former Westbank Irrigation District, in cooperation with the BC Ministry of Agriculture, established water irrigation levels for farming (24 inches during the irrigation season). These levels determined with input from the agricultural community. A capital works plan originally prepared by the former Westbank Irrigation District identified an option to supply agricultural land with untreated water. Alternatives for cost savings that may be equally attractive are increased efforts in conservation and other water-saving strategies such as drip irrigation.

[13] West Kelowna Agricultural Plan, 2011. http://www.districtofwestkelowna.ca/DocumentCenter/View/1300
[14] Ibid.
[15] Ibid.
[16] Ibid.

4.2 SOILS AND GEOLOGY

During the Pleistocene epoch, ice sheets extended over the Okanagan up to 7,000 feet in elevation. The weight and friction of the ice rounded the hills and caused pre-existing soils and loose materials to move into and mix with the ice[17]. Large rock formations were crushed into a variety of soil textural sizes. As the glaciers retreated over time to the mountaintops, the valleys were partly blocked by remnants of the ice sheets. This debris accumulated to form till that was redistributed over the valley through glacial meltwater and filled the valley bottoms. Ponding took place to the north of Westbank, while to the south drainage occurred through slow moving rivers and the valley sides. The till was eroded to form gravelley terraces, sandy terraces, sands and silts, and glacio-lacustrine clays. Differences in chemical composition between soils in the area is generally the result of water sorting.

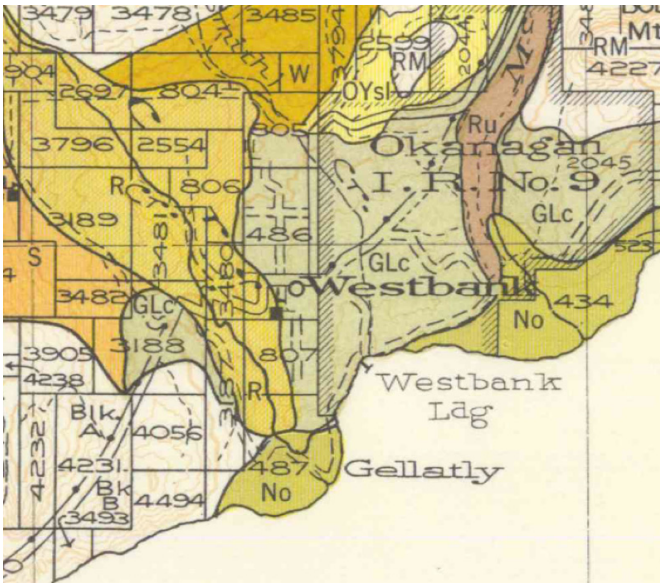
The soils in the Westbank Centre Agricultural Plan study area are a combination of Glenmore Clay (GLc) and Rutland Gravelly Sandy Loam (R)[18] (Figure 3). These soils are part of the Dark Brown Soils classification for the Okanagan Valley. These soils exist in arid areas at a higher elevation than the valley bottoms, usually occupying an elevation of 1,130 feet to 3,500 feet. These soils provide a short season for peaches and apricots, however apples, pears, cherries, and grapes can give excellent yields under the right drainage and irrigation conditions.

The following descriptions of Rutland and Glenmore soils are derived from Kelley and Spilsbury's soil survey report and associated mapping[19]. Rutland soils are derived from gravelly and stony terraces at elevations between 1,200 and 2,700 feet. The soil surface is dark brown shading to brown in the lower part, with varying amounts of stones and gravel. The top

[17] Kelley, C.C. and R.H. Spilsbury, 1949. Soil Survey of the Okanagan and Similkameen Valleys, BC. Report #3 of the British Columbia Survey. http://sis.agr.gc.ca/cansis/publications/surveys/bc/bc3/bc3_report.pdf
[18] Ibid.
[19] Kelley, C.C. and R.H. Spilsbury, 1949. Soil Survey of the Okanagan and Similkameen Valleys, BC. Report #3 of the British Columbia Survey. http://sis.agr.gc.ca/cansis/publications/surveys/bc/bc3/bc3_report.pdf

layers are sandy loams that are underlain by coarser materials such as gravel. These soils require irrigation in order to become agriculturally productive. These soils are often more suitable for orchards, rather than for tilled crops. Glenmore soils are derived from lacustrine sediment deposits. They are clay soils with undulating topography, generally located at elevations between 1,150 and 1,500 feet. The heavy clay causes drainage issues when irrigation water is used in excess. The surface is brownish grey, heavy clay with a brownish grey subsoil. These soils are suitable for a range of agricultural crops, including grains such as wheat. In order to successfully grow orchards and vegetables, subsurface drainage is recommended.

Figure 3. Soil map of Westbank Centre. Sheet No. 2. Soil Survey of the Okanagan Valley, 1948.

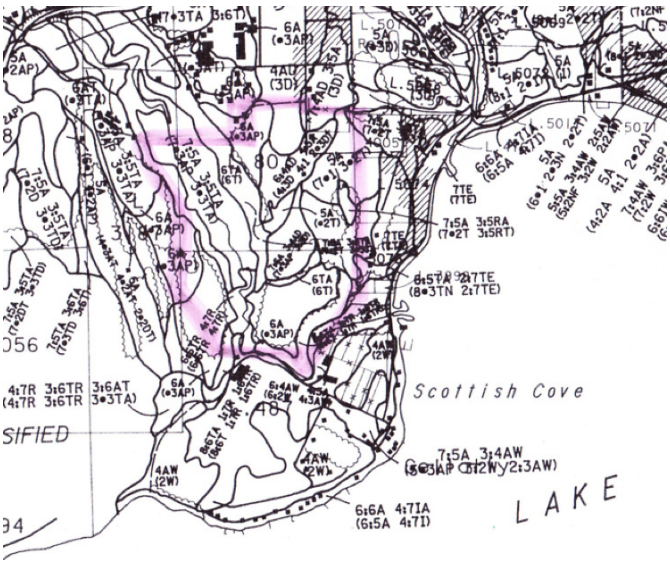


4.3 AGRICULTURAL CAPABILITY

The agricultural capability ratings of the soils in Westbank range from Class 4 – 7 (unimproved) and Class 1 – 7 (improved) (Figure 3). The improved rating assumes that drainage and irrigation are available and that some land grading and stone removal has been undertaken. The main limitation noted both on the agricultural capability mapping and during site visits is steep terrain in some pockets. This will alienate a small amount of the overall land to farming, and is typical of the landforms found along the west side of Okanagan Lake. The Agricultural Land Commission notes that in areas that are climatically suitable for growing tree fruits and grapes, stoniness and/or topography are not significant limitations[20].

Class 1 is applied to land that has the climate and soil to allow a farmer to grow the widest range of crops. Class 7 is land that is considered non-arable, with no potential for soil bound agriculture. The intermediate classes may be inappropriate for some agricultural uses, while being highly suitable for others[21]. Even Class 6 land, while precluding some conventional, arable agricultural activities, may still sustain native and/or perennial uncultivated agriculture, often used for animal grazing, orchards, and grapes.

Figure 4. Agricultural capability map with study location boundary noted in pink.



[20] Agricultural land capability classes. Agricultural Land Commission. http://www.alc.gov.bc.ca/alc/content/alr-maps/agricultural-land
[21] Agricultural land capability classes. Agricultural Land Commission. http://www.alc.gov.bc.ca/alc/content/alr-maps/agricultural-land

4.4 WEATHER AND FROST FREE DAYS

The Okanagan climate is one of the mildest in Canada. Summers are warm with cool nights and winters are mild with occasional low temperatures lasting from a few days to a few weeks[22]. The Okanagan Valley is located in the rain shadow of the Coast Mountains and receives the moist Pacific air masses forced up and over the Coast and Cascade Mountains.

The weather station located in Peachland (12 km to the southwest) provides the following weather and climate normals (1981 to 2010) data[23]. Changes in data and trends since 2010 have not yet been published, however anecdotal evidence suggests that warmer springs are resulting in earlier blossoming of fruit trees.

The period available for plant growth is largely confined to the time between the last frost in the spring and the first frost in the fall. The frost-free period varies widely throughout the Okanagan Valley and can fluctuate dramatically from year to year. The Okanagan Valley's climate is favourable for orcharding with mild winters and relatively high snowfall, mild springs, and long, hot summers.

[22] Kelley, C.C. and R.H. Spilsbury, 1949. Soil Survey of the Okanagan and Similkameen Valleys, BC. Report #3 of the British Columbia Survey. http://sis.agr.gc.ca/cansis/publications/surveys/bc/bc3/bc3_report.pdf

[23] Climate normals: Peachland, BC weather station. Environment Canada. http://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?stnID=1046&lang=e&province=BC&provSubmit=go&page=151&dCode=0

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Daily Average (°C)	-0.2	1.4	5.4	9.7	14.3	18.0	21.4	20.8	15.8	9.6	3.7	-0.5	10
Daily Maximum (°C)	1.9	4.3	9.7	14.9	19.8	23.3	27.2	26.4	20.9	13.5	6.2	1.6	14.1
Daily Minimum (°C)	-2.4	-1.6	1.1	4.5	8.7	12.6	15.6	15.3	10.6	5.6	1.1	-2.5	5.7
Rainfall (mm)	19.6	14.2	18.6	24.4	34.8	41.9	31.8	26.1	23.5	28.4	31.8	14.5	309.5
Snowfall (cm)	23.8	10.1	5.0	0.1	0	0	0	0	0	0.2	13.3	31.3	83.9

Table 1. Temperature and precipitation normals for Peachland, BC.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Days with Minimum Temperature > 0 °C	-0.2	1.4	5.4	9.7	14.3	18.0	21.4	20.8	15.8	9.6	3.7	-0.5	10

Table 2. Frost free days at the Peachland weather station, BC.

4.5 CLIMATE CHANGE

Farmers are accustomed to the weather influencing their activities and weather-dependent decisions are a part of farming life. Adapting to climate change, however, involves a more systematic assessment and response. Agriculture is highly vulnerable to changes in climatic conditions and even small shifts could have significant consequences for farm viability and food production. Despite the challenges of applying broad climate models, some general projections are anticipated in BC between now and 2050. Additional secondary effects may include a range of conditions described in Table 3[24].

Although there is general consensus regarding the impacts of climate change, how these might impact specific microclimates is uncertain, yet critical for agricultural producers concerned with the effects of climate change and precipitation within their specific locale. Modelling suggests that climate change in the Central Okanagan area will bring about an increase in frost free days, a decrease in spring snowfall, and a decrease in summer rains.

[24] BC Agriculture and Food Climate Action Initiative. Regional forecasting. http://www.bcagclimateaction.ca/

Table 3. Potential impacts of climate change on agriculture in the Okanagan.

Climate Change Condition	Potential Agricultural Impacts
Changing hydrological regime, decrease in summer precipitation	Decrease in productivity and quality of crops and livestock under water stress, increased costs, reduction in water supply (at times of high demand), increase in management complexity
Increasing precipitation and variability of precipitation (especially in spring & fall)	Interruptions to planting, input applications and harvesting, increase in excessive moisture and site-specific flood risk, increase in pressure on drainage and water management, interruptions to pollination, decrease in light levels, increase in nutrient and input leaching, increase in management complexity
Changing crop suitability ranges	Inconsistent productivity, quality and therefore prices; increase in suitability for new varieties of forage and field vegetable crops, increase in suitability of new crops
Changes in pest and disease	Increase in winter survival rates, increase in number of cycles in a year, introduction of new pests and diseases, increase in management costs, complexity, uncertainty, increase in delays or prevention of pollination
Increase in extreme weather events (storms, wind, extreme heat)	Decrease in productivity and quality, increase in building maintenance and damage costs, decrease in heating costs, increase in cooling and ventilation costs, interruptions to regional infrastructure and supply lines
Climate change impacts to other growing regions	Increase in feed or other input costs, increase in demand for food production/local food

05 AGRICULTURE PROFILE OF THE STUDY SITE

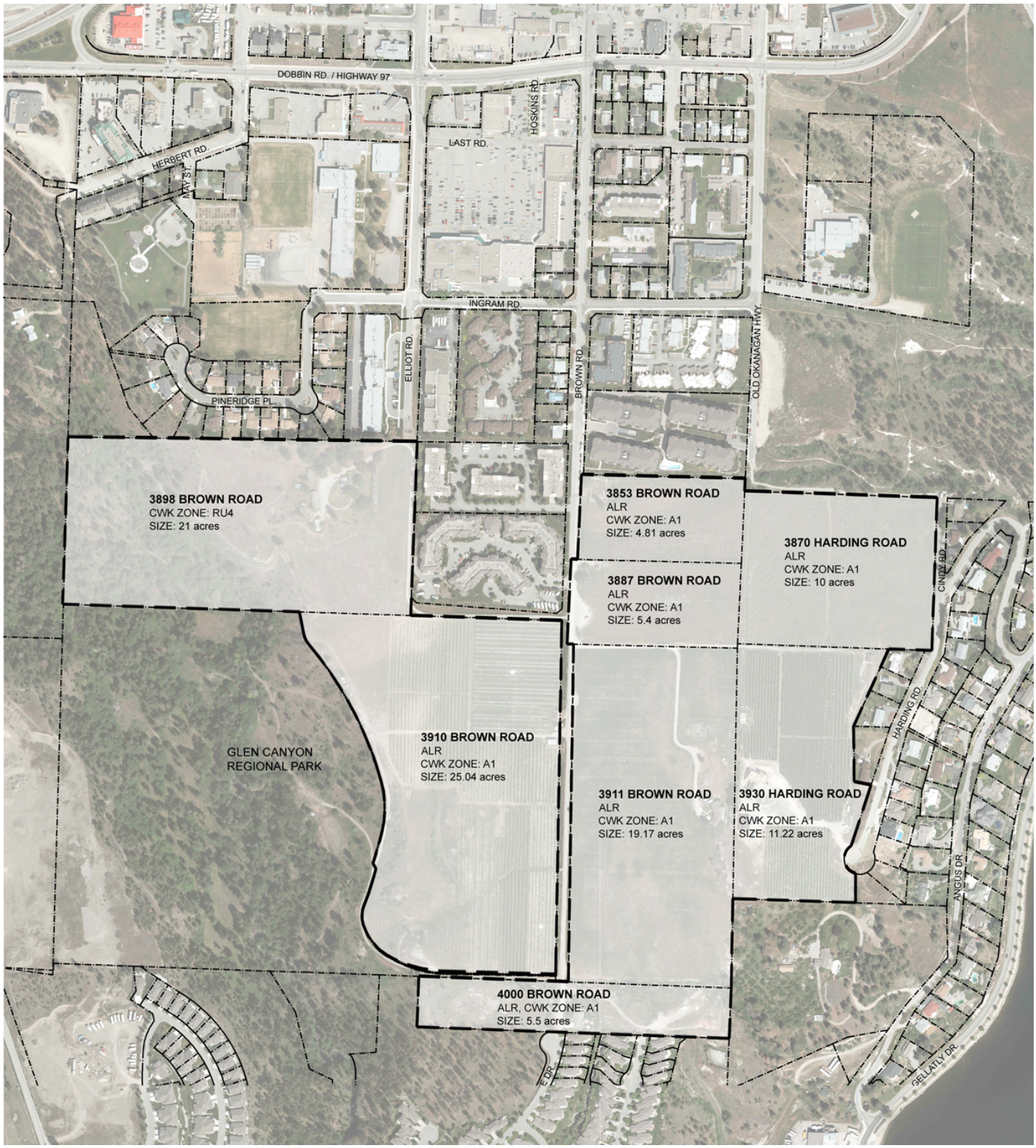


Figure 5. Properties in the study.

Address	Zoning	Size (Acres)	Agricultural Capability	Notes from Historical Files & Site Visit
3870 Harding Rd.	Zone A1 and in the ALR	10 acres	Class 4 to 7	There are no residences or any structures on the site. None of the land is currently under production. There were previously red delicious apples planted on the parcel but these were removed approximately 10 years ago. The roots of the trees are still in the ground. The irrigation system is still installed but may not be in working order.
3930 Harding Rd.	Zone A1 and in the ALR	11.2 acres	Class 4 to 7	In March 2013, ALC approved intent to import 10,000 m3 of topsoil/ sandy loam/small rock onto 2.5 ha (6.2 acres) of the property for the purpose of levelling the land to accommodate greenhouse house placement and strawberries. However, no greenhouse or strawberry production are currently on the site. Approximately 7 acres are under production for apples. The trees are approximately 15 years old.
3853 Brown Rd.	Zone A1 and in the ALR	4.81 acres	Class 1 - 3. Within Zones 1 and 2 on Frost Risk Maps	This 5 acre parcel is bounded by medium density residential development to the north, Brown Rd to the west, and 3870 Harding Rd to the east. Of the 5 acres, about 4 are cultivable. The acre running along the northern boundary of the site is damp, and the northeast corner is an Environmentally Sensitive Area. It should be noted that there is no vegetative buffer between the medium density residential development and the property.
3887 Brown Rd.	Zone A1 and in the ALR	5.4 acres	Class 1 - 3. Limitations: soil imperviousness and topography	This 5 acre parcel is relatively flat and there does not appear to be any major farming constraints.
3911 Brown Rd.	Zone A1 and in the ALR	19.17 acres	Class 1 - 3	The ALC did not support a previous exclusion application for this property. There is a tenant currently renting a house on the property. A fruit orchard was converted into a vineyard in the mid-1970s and for many years grapes were grown through a contract with Calowna Vines. However, due to changes in market conditions the vines were removed and replaced with a hay crop. Steep topography and exposed rock reduces the cultivable area to about 17.5 acres.
3910 Brown Rd.	Zone A1 and in the ALR	30.77 acres	Class 3, Suitable for wide range of crops	There is a small house on the site, which is in need of improvements. It may have been used for farm worker housing in the past. There is no main residence on the site. The property was previously an apple orchard but the trees were removed about three years ago. Irrigation hook-ups on the property are still installed and the support poles for the orchard are stockpiled on the property. The southern edges of the property are now part of a trail system connecting to Glen Canyon Regional Park. There is some variation in topography on the site, indicating likely “frost spots” and smaller areas with steep slopes that would likely be difficult to farm. Of the 25 acres east of the park, approximately 17 may be cultivated.
4000 Brown Rd.	Zone A1 and in the ALR	5.5 acres	Class 2	About half of the property is used for residential purposes. Approximately 2.5 acres are located directly south of 3910 Brown Rd. and could be farmed.
3898 Brown Rd.	Zone RU4 and not in the ALR	21.1 acres	Class 3	Not currently being farmed. A residence is located on the parcel. Medium-density residential development is located to the east of the parcel. This acreage is not included in the crop scenarios.

Table 4. Attributes of the parcels involved in the study.

5.1 CURRENT LAND USE

Although the lands are no longer agriculturally active, the agricultural zoning and land use designations for these parcels remain. Each parcel is zoned 'Agricultural (A1)' under Zoning Bylaw No. 154 and designated 'Agricultural' under the City's Official Community Plan. Their agricultural productivity potential remains protected by the Agricultural Land Commission as the lands are within the ALR. A map of the properties included in the study is provided in Figure 5. Attributes of each parcel are described in Table 4.

5.2 CROP FEASIBILITY

There is a growing potential for most agricultural products grown locally, tied closely to the interest in reducing our carbon footprint and an expanding interest in future food security. Generally speaking, there is a considerable market for expanding local food production. Research completed during public consultation for the West Kelowna Agricultural Plan indicated that there is demand in West Kelowna for more local food choices, expanding into niche or specialized markets, or those suitable for culinary tourism.

Based on the agricultural capability and climate of the study site, the ability to accommodate a diverse base of agricultural activities is high. Certain infrastructure, such as fencing, irrigation, and drainage will be required. Fortunately, some of this infrastructure is already in place. There are a few pockets of steep topography, rocky outcrops, and/or wet depressions. However, these do not amount to a significant portion of the study site.

In order to develop viable agricultural operation on the site, a certain amount of capital investment will be required. This is the case for any farming operation in order to remain competitive in today's market. A combination of direct farm sales, local wholesale and retail, and exports can be expected to form the sales strategy. Incorporating some amount of processing, value-added, and agri-tourism features will make the operation more economically competitive as well. Recent changes to provincial policies and regulations have created some additional flexibility regarding income from on-farm processing and agri-tourism activities and this is further explained in Section 6.

Table 5 provides an overview of all the potential crop scenarios that could be viable for the land included in the Westbank Centre Agricultural Plan, with ranking of High, Medium, or Low provided.

ID #	Agricultural Activity	Considerations	Relative Cost of Start-Up	Relative Return on Investment	Suitability Ranking
1	 Root vegetables (potato, onion, carrot, radish, beets) and green vegetables (lettuce, celery, cabbage, broccoli, spinach, herbs)	Soil and climate are well suited to vegetable crops. Basic amendments for pH and organic matter will be required. Annual soil fertility testing and nutrient program is recommended. Irrigation will be required, however many of the fields already have this infrastructure in place.	Medium - Low	Medium - High	High
2	 Fruit trees (apple, cherry, peach, apricot, plum orchards)	Soil and climate are well suited to fruit trees. Basic amendments for pH and organic matter will be required. Irrigation is also required, however many of the fields already have this infrastructure in place. Fruit trees require deep mineral soils for rooting and are susceptible to frost. Pollinators will be required and pests such as birds may be a problem (will require netting or other deterrents). There is a strong history of orchard production therefore the area includes local support systems such as processing and distribution channels.	High	High - Very High	High

Table 5. Crop feasibility assessment for Westbank Centre.

ID #	Agricultural Activity		Considerations	Relative Cost of Start-Up	Relative Return on Investment	Suitability Ranking
3		Viticulture (table and/or wine grapes)	Soil and climate are well-suited for most grape varieties to produce well. Grapes require well-drained soils, and most of the soils on the site meet this criteria. Grape vines can take many years to establish and bear high fruit yields. Emerging and established grape production within the area offers many local sales and processing opportunities.	High	High - Very High	High
4		Strawberries	Strawberries could do well on this site, particularly before the weather gets too hot in later summer. It is likely that pH amendments and organic matter will be required. Temperature controls and irrigation will be required. Raised beds or hills may make production most feasible. Will require netting or other bird deterrents.	Medium	Medium	High
5		Honey Bees	May require electric fencing or similar security to deter wildlife. Will benefit agricultural and non-agricultural plants through increased presence of pollinators. Local sales of honey could be done at the farm gate.	Medium - Low	Medium	High
6		Hoop Houses	Good for greens, strawberries, and a variety of starter plants. Fertilizer demands and green waste produced may be high, depending on crops grown. Set up and maintenance costs are lower than larger types of greenhouses. Irrigation infrastructure may be required.	Medium - Low	Medium - High	High
7		Farm Gate Sales	A farm stand could offer products grown on the site for sale. Staffing the booth may be required to reduce theft and vandalism. Electricity and water servicing may be required. Parking will also likely be required. Integration of site-based agriculture, education, and/or recreation could result in successful agri-tourism initiatives such as tours, slow food hikes/cycles, culinary events, and local food celebrations (Feast of Fields, etc.).	Medium	Medium - High	High
8		Vine vegetables: Tomatoes, sweet peppers, cucumbers	Highly susceptible to frost. Climate is very well suited to these vine vegetables – maybe a bit hot for cucumbers in the middle of summer. May be grown in the field or in a greenhouse environment.	Low-Medium for field-based, high for greenhouse	Medium - High	Medium

ID #	Agricultural Activity		Considerations	Relative Cost of Start-Up	Relative Return on Investment	Suitability Ranking
9		Blueberries	Blueberries require acidic soils – therefore intensive site preparation will be required. This may include wood chips for the bushes to root in. Pest controls will be required, particularly regarding predation from birds and small mammals, and will need to be mitigated through netting, sprinklers, or other deterrents. There are not many blueberry farms located in the Okanagan, therefore processing and other value-added facilities may be lacking.	Medium - High	Medium - High	Medium
10		Pumpkins, succhini, squash, melon	Squash are very susceptible to frost and the summer climate may be too hot for some varieties. This could be somewhat mitigated through shading and irrigation. Melons may be better suited to the climate than pumpkins however a pumpkin patch could be a good tourist attraction.	Medium - Low	Medium	Medium
11		Corn	Corn requires a deep water table. Soil amendments for pH and organic matter will be required. May require addition/mixing of organic matter for improved structure. Will require heavy farm equipment. Corn is often grown for livestock consumption, however, a corn maze could be a good tourist attraction.	Medium - Low	Medium - Low	Medium
12		Field flowers	Flowers could be a beautiful addition to this site, and if so, bulbs or perennials would be a preferable investment. Drainage and irrigation may be required. Pests such as insects and birds may require mitigation. Sunflowers, tulips, or other popular varieties could be sold at the farm gate.	Medium	Medium	Medium
13		Cereal grains	Requires deep water table. May require addition/mixing of organic matter for improved structure. May require investment in combines, tractors, and other large equipment. Could be cultivated for market in North Okanagan (Rogers flour mill is located in Armstrong, or Fieldstone Granary).	Medium - Low	Low	Medium
14		Poultry (small to medium scale, free range)	Risk of possible predation by wildlife is high (coyotes, hawks, etc). Will require electric fencing or similar security to deter wildlife. Caretaker will be required on site 24/7 for animal well-being and to prevent theft and/or vandalism. Coops, shelters, fencing, drinking water, and heating will all need to be considered.	Medium	Medium	Medium

ID #	Agricultural Activity		Considerations	Relative Cost of Start-Up	Relative Return on Investment	Suitability Ranking
15		Polyhouses	Ideal crops include: greens, strawberries, nursery stock, vine vegetables (tomatoes, cucumbers, peppers), and/or flowers. Fertilizer demands and green waste produced may be high, depending on crops grown. Set up and maintenance costs may be high. Excavation and fill may be required, depending on the size of the greenhouse. Heating and irrigation infrastructure required. Waste management/composting systems may be required.	Medium - High	Medium	Medium
16		Sheep and goats (small to medium sized flock)	Caretaker will be required on-site 24/7 for animal well-being and to prevent theft and/or vandalism. Barns, drinking water, and heating for shelters will all need to be considered. Sheep and goats will require grass, hay, alfalfa, or other forage crops for grazing.	High	Medium	Medium
17		Petting zoo	Predation by wildlife is possible. Location may not be suitable due to proximity to residential areas and the inherent noise involved. Caretaker will be required on-site 24/7 for animal well-being and to prevent theft and/or vandalism. Fencing, barns, drinking water, and heating for shelters will all need to be considered.	Medium - Low	Low	Medium
18		Cattle (dairy and/or beef)	Quota system may need to be purchased for dairy production. Approximately 25 acres of grass/hay production is typically required for an average herd of dairy cattle. This provides food for the animals and adequate land for manure application. Caretaker would be required on-site 24/7 for animal well-being and to prevent theft and/or vandalism. Infrastructure considerations include drinking water, barns, and heating for shelters during winter. Will require grass, hay, alfalfa, or other forage crops for grazing.	High	Low	Low
19		Horses	Caretaker would be required on-site 24/7 for animal well-being and to prevent theft and/or vandalism. Development of fencing, stables, riding rings may be required. Will require grass, hay, alfalfa, or other forage crops for grazing. Connections to nearby trails is a possibility.	High	Low	Low
20		Other animals: Llamas, alpacas, emus, deer	Predation by wildlife is possible. Caretaker will be required on-site 24/7 for animal well-being and to prevent theft and/or vandalism. Fencing, barns, drinking water, and heating for shelters will all need to be considered. The animals will require grass, hay, alfalfa, or other forage crops for grazing.	High	Low	Low

ID #	Agricultural Activity		Considerations	Relative Cost of Start-Up	Relative Return on Investment	Suitability Ranking
21		Glass houses	Ideal crops include: nursery stock, vine vegetables (tomatoes, cucumbers, peppers), and/or flowers. High yield production may be in excess of seasonal market demand. Glass house floors may be soil-based (organic production) or concrete. Caretakers will be required on-site 24/7 to prevent theft and/ or vandalism. Initial capital investment will be high as glass greenhouses and associated infrastructure can cost approximately $1 million per acre. Excavation and fill required. Heating and irrigation infrastructure required. Waste management/composting systems required.	Very High	High - Very High	Low

5.3 TOP THREE CROP SCENARIOS

5.3.1 SCENARIO 1 – CIDER PRODUCTION

Table 6. Summary of crops in Scenario 1.

Scenario 1	Area (acres)
Cider apples	45
Dessert apples and mixed fruit	10
Mixed - use (apiary, pollinator gardens, incubator farm sites, community gardens)	5
Total	**60**

Description of the Operation

Under this scenario, apples are the main crop and are intended for hard cider production (Table 6). Dessert apples, mixed tree fruit (cherries, peaches, plums, apricots), and mixed vegetables would be produced on a smaller scale in order to create a diversity of products for sale at the farm gate. Honey production is also an option.

The cidery would be a year-round business, tailoring most of its activities around the fall harvest season. Visitors would enjoy accommodation, prepared food, and outdoor activities, as well as a retail outlet. The cidery will be located in it's own separate building, and feature alcoholic and non-alcoholic ciders, caramel apples, doughnuts, pies, and other food related gifts. Visitors would be able to watch cider being made first hand.

Licensing

British Columbia, unlike Washington or Oregon, uses an alcohol licensing system employing two separate winery license categories, "Land-based" and "Commercial". For those producers owning or leasing a minimum of two acres of orchard, and using at least 25% of their own apples in their finished product, a land-based license is held. A land-based winery in BC may use only grown-in-BC agricultural inputs, and must be based on the site of apple cultivation. For those producers without orchard lease or ownership, a Commercial license is held. In Westbank Centre, it is expected that land-based licenses will be obtained.

The process for setting up a license is to apply for a Manufacturer's License with the Ministry of Public Safety and Solicitor General. The provincial government has very comprehensive information on the steps necessary to take to get a manufacturer's license for the production of cider (or spirits, wine and beer). This information can be found at: http://www.pssg.gov.bc.ca/lclb/apply/manufacturer/index.htm.

Some of the highlights of the necessary steps include:

- Business plan with financial statements for three years;
- The need for an Agents License to market and promote products off-site;
- Age at least 19 and a resident of BC, Canadian citizen or permanent resident;
- Consent to a criminal record search;
- Not be associated with an establishment holding a liquor license (e.g. bar, restaurant);
- Must have equipment and facilities adequate for producing at least 4,500 litres per year;
- Need a Federal Excise Tax license and tax number;
- Review of proposed floor plans by local fire/building authorities;
- Application fees are $550 for a distillery or brewery; and
- Annual license fees range from $550 to $1540.

Recent Market Trends for Hard Cider

Historically, dessert apples were the dominant crop being produced in Westbank Centre[25]. However, the effect of several factors, including lower production costs in other parts of the world, a fire at the West Kelowna Packinghouse, an increase in grape production, and rising farmland prices, have lead to a decrease in apple production both locally and throughout the Okanagan Valley. Many Okanagan farmers moved away from apple production and replanted their fields with grapes to capitalize on the expanding local wine industry. However, there are recent indications that the tide is turning. In the summer of 2015, the BC Fruit Growers Association reported a very slight expansion of acreage devoted to apple growing in the Okanagan Valley after decades of decline in apples[26]. There have reportedly been inquiries from grape growers asking about switching over to apple production. Reasons for this may be a levelling off in demand for Okanagan-grown wine grapes, and increased opportunities for apples. However, apples are unlikely to remain profitable without different marketing strategies in place.

Along with the rise of micro breweries and micro distilleries, the cider industry is seeing increased demand for more flavors and styles of cider. A recent comparative study[27] describes the availability of cider-specific apple varietals in BC as "limited at best". Bittersharp and bittersweet apples possess specific flavour characteristics that make them desirable in a blend for cider. Based on consumer demand, BC Tree Fruit's member orchards generally grow dessert apples that can be sold at grocery stores. One Okanagan packing house, Cawston Cold Storage, located in Cawston, BC, sells Newton Pippen, a particularly popular cider apple varietal. These apples sell out fast, and as a result can command a premium price, approximately $0.35/lb, as opposed to $0.10/lb for more mainstream varietals.

Changing laws and regulations[28] have made small cideries a more feasible option for orchardists. The hard cider industry is currently increasing in sales volume and sales value, but it is still the smallest category of alcoholic beverages. From 2008 to 2009, total US sales volume increased 2% to 208,000 barrels[29]. Cider increased in sales value by 5.5% or from $203 million to $214 million even though total U.S. alcohol consumption went down by 3.3%[30]. In Canada, cider sales performed well in 2014 as demand was further fuelled by cider as a choice summer beverage and with continued growth of cider taps being installed in pubs and restaurants[31].

[25] West Kelowna Agriculture Plan, 2011. http://www.districtofwestkelowna.ca/DocumentCenter/View/1300
[26] Central Okanagan Economic Profile for Agriculture, 2015. Invest Kelowna. http://www.investkelowna.com/sites/default/files/uploads/agriculturalprofile_centralokanagan_2015-11-20.pdf
[27] E. Douglas, 2014. Craft Cider in British Columbia: A Comparative Study of Regional Cider Production and Regulatory Environments. Royal Roads University, Victoria, BC.
[28] Wineries and cideries in the ALR, 2016. Agricultural Land Commission updated policy. http://www.alc.gov.bc.ca/assets/alc/assets/legislation-and-regulation/policies/alc_-_policy_3_-_wineries_and_cideries_in_the_final.pdf
[29] E.R. Johnson, 2011. Richard Manly Brewing Company: Profitability Analysis of a Hard Apple Cider Company. Faculty of the Agribusiness Department, California Polytechnic State University.
[30] Ibid.
[31] Canadian cider/perry report, 2015.Euromonitor. http://www.euromonitor.com/cider-perry-in-canada/report

Cider competition is highly concentrated, with the top three producers accounting for 83% of the Canadian volume share in 2014[32].

The growing interest in cider as an alternative to beer and wine in Canada has seen the beverage category experience double-digit year-over-year sales growth: in 2012 alone, unit sales of cider in Canada grew 32% over the previous year[33]. Cider sales in BC grew by 15.8% from 2013 to 2014: the only BC Liquor Distribution Board beverage category to experience double-digit sales growth. Strong growth over the forecast period is expected, with cider increases of 24% in volume to reach 91 million litres by 2019[34].

Some of the top independent craft cider producers in BC are:

- Merridale Estate Cidery (Cobble Hill)
- Sea Cider (Saanich)
- BX Press (Vernon)
- Left Field Cider Co. (Logan Lake)
- East Kelowna Cider Company (Kelowna)
- BC Tree Fruits Cidery

Capital Investments/Inputs

The most capital-intensive component for the cider industry is land acquisition, either through purchase or lease. It takes many acres of apple production to supply a cidery and there will be a need for some amount of land to be devoted to buildings, selling the products and parking to support visitors. Along with the cost of land, orchardists must also wait several years for the trees to mature in order to produce fruit. This represents a long wait of missed revenue. As a result, most cideries use a mix of apples grown on site and imported from other farms to create their cider, at least for the first few years. Aside from land and buildings, the main equipment required will be apple presses and tractors.

[32] Ibid.
[33] Crosariol, B., 2013 (Jul. 30). Looking for an alternative to beer? Here's why you should try hard cider. The Globe and Mail. http://www.theglobeandmail.com/life/summer-living/looking-for-an-alternative-tobeer-try-hard-cider/article13504537/
[34] Ibid.

Examples of capital costs[35]:

- Agricultural land: 45 acres at $100,000 per acre on average is $4.5 million;
- Building improvements (cidery building): $400,000;
- Orchard infrastructure (e.g. fencing, irrigation, posts, wire, bins): $640,000;
- Field equipment (tractors, mowers, sprayer): $100,000
- Cider apple trees: $350,0000;
- Production and bottling equipment (harvesting, press, fermentation tanks, bottling): $175,000;
- Operating expenses (labour and staff, legal, accounting, marketing, insurance, office expenses, hydro, etc): $100,00; and
- Total capital costs: approximately $1,765,000 (not including land).

Start-up costs will include purchasing most of the equipment needed for brewing the cider, about 6 months' worth of packaging products, costs of apples, costs of licenses and application fees, costs of hiring and training employees, and the high initial marketing and sales expenses.

Potential Profits and Losses

The following profits and losses calculations are based on the assumption that 2,000 barrels will be produced from apples grown both on-site and imported from other farms. The numbers below were found both through online pricing searches and in the literature[36,37,38].

Yield estimates

- A yield of 22,000 – 30,000 kg of apples per acre is possible once in full production (tall spire);
- 4,500 litres of cider is about 9,000 kg of apples (2.0 kg of apples per liter of cider is a conservative estimate);

[35] These numbers were derived through literature already mentioned in these footnotes as well as personal communication with R. Johnson, local orchardist.
[36] E. Douglas, 2014. Craft Cider in British Columbia: A Comparative Study of Regional Cider Production and Regulatory Environments. Royal Roads University, Victoria, BC.
[37] Ibid.
[38] ABC Cider Mill's Business Plan: Michigan Apple Committee /MSU Product Center. http://productcenter.msu.edu/uploads/files/Cidermillbusinessplan-7-29-05.pdf

- Therefore one acre (avg. 26,000 kg) is about 13,000 liters of cider under full production;
- 45 acres is the equivalent of 585,000 litres of cider.
- 585,000 liters = 155,000 gallons
- 155,000 gallons = 5,000 barrels

It takes approximately 12.5 lbs of apples to make 1 gallon of cider, and there are 31 gallons in each U.S. barrel. Therefore, 744,000 lbs of apples with a total cost of $230,640 are needed to produce 2,000 barrels of cider[39]. A 45-acre mature cider apple orchard can be expected to produce 5,000 barrels of cider per year. We can assume that 4,000 barrels will be sold through bottling and canning and 1,000 barrels will be sold as kegs.

Costs:

- 4,000 barrels is the equivalent of 1.34 million bottles or 220,400 six-packs.
- Cost of bottles, labels, caps and six-pack boxes are approximately $2.75/six pack or $606,000.
- The other 1,000 barrels of cider will be put into 2,000 kegs.
- Initially 1,000 kegs can be bought at $15/keg, sold and then reused. More may need to be purchased as the kegs are lost, damaged, or production increases due to higher sales. Initial cost will be $15,000.
- Total bottling and keg costs will be $621,000.

The following sales assumptions are made:

- 50% of the six-packs sold on-site (farm gate) @ $15 return to the cidery each;
- 50% of the six-packs sold through stores (retail) @ $10 return to the cidery each;
- 25% of the kegs sold directly from the farm (farm gate) @ $200 return to the cidery each; and
- 75% of the kegs sold to restaurants, bars, and pubs (retail) @ $150 return to the cidery each.

Potential gross sales:

- Farm gate six-packs: $1,653,000
- Retail six-packs: $1,102,000
- Farm gate kegs: $100,000
- Retail kegs: $225,000
- Total gross sales: $3,080,000

Other expected costs include:

- Labour (including seasonal farmworker housing): $165,000
- Machinery and equipment maintenance: $50,000
- Administrative and overhead costs (e.g. accounting, insurance): $100,000
- Irrigation and electricity costs: $150,000 and
- Taxes and fees: $300,000.
- Total annual costs: $765,000

Therefore, a rough estimate of annual net revenue on 45 acres of cider apples would be:
$3.08 million - $765,000 = $2,315,000.

However, it should be noted that the debt repayment estimates may not adequately capture the high cost of land in the Okanagan, and may need to be adjusted at a later point. These figures represent estimates only.

Example: Sea Cider Farm on Vancouver Island (Saanich) is a small producer (1,300 organically-grown apple trees on 10 acres of land). Some additional apples are imported, such that annual cider production is upwards of 9,000 cases (12 bottles of 750ml = 81,000 litres) and the cidery is able to provide 30 jobs[40].

[39] E.R. Johnson, 2011. Richard Manly Brewing Company: Profitability Analysis of a Hard Apple Cider Company. Faculty of the Agribusiness Department, California Polytechnic State University.

[40] Growing business for Vancouver Island cidery. http://engage.gov.bc.ca/bcjobsplan/job-makers/growing-business-for-vancouver-island-cidery/

5.3.2 SCENARIO 2 – CHERRY PRODUCTION

Table 7. Summary of crops in Scenario 2.

Scenario 2	Area (acres)
Sweet cherries	50
Mixed tree fruit	5
Mixed - use (apiary, pollinator gardens, incubator farm sites, community gardens)	5
Total	**60**

Description of the Operation

Under Scenario #2 (Table 7), cherries are the main crop intended for local sales and export. The demand for sweet cherries has been a notable trend in recent years, particularly by customers in China and other parts of Asia. Acreage devoted to sweet cherries increased by 40% between 2006 and 2011 and the total area planted to sweet cherries in this region accounts for 87% of BC's, and 75% of Canada's total farmland in sweet cherries.

Recent Market Trends for Sweet Cherries

The Okanagan is home to most of BC's tree-fruit orchards. Sweet cherries is BC's second largest tree-fruit crop, after apples. The amount of area under cherry production has expanded significantly over the past few years as the industry continues to position itself to produce high-value, high-quality fruit, and become a strong player in the global market[41]. In 2013, cherry production in BC was 10,900 tonnes and the export of sweet cherries was valued at $43 million, almost triple the value of exports recorded five years prior, in 2008[42]. Growers increased their harvest to almost 15,500 tons of sweet cherries in 2014, the greatest volume since the record 15,668-ton harvest of 2009[43].

Top export markets for B.C. cherries in 2013 were Hong Kong, the United States, and Taiwan. Exports to Hong Kong increased from just over $0.5 million in 2008 to $15.7 million in 2013, a near thirty-fold increase in just five years[44]. B.C. cherry exports to Taiwan more than doubled in the last five years, increasing from $2.6 million in 2008 to $5.9 million in 2013. The China Cherry Trade Agreement was created in June, 2014. The new agreement allows cherry shipping to Mainland China in addition to Hong Kong and Taiwan[45]. This agreement opens up a wealth of export opportunities for cherry growers. At around the same time, the BC Tree Fruit Replant Program was announced (November 2014)[46]. This program provides financial help for growers to replace fruit trees with varieties that will meet consumer demands for high-value, high-quality B.C. fruit. The BC government has committed $8.4 million towards this seven-year replant project between 2015 and 2021. Local cherry sorting and packing facilities have since been installed to meet the expected boost in local supply. BC Tree Fruits now has a dedicated cherry line in its packinghouse in Kelowna where it runs 16 hours a day, processing five tons of cherries per hour during peak harvest times[47]. The Khela family of Oliver built a $3 million, 16,000 square foot cherry packing facility on an 11-acre site in North Glenmore, Kelowna, in 2014[48].

Concerns have been expressed that returns from the domestic market are simply not enough to cover capital costs, including land which can run as much as $100,000 per acre, and operational costs. However, it is possible that the export mark can help to sustain local cherry farms over the long term.

[41] BC Cherry Association. Frequently asked questions. https://bccherry.com/faq/
[42] BC Cherries on the rise, May 27 2015. Peter Mitham, Good Fruit Grower. http://www.goodfruit.com/exports-benefit-b-c-cherry-growers/
[43] Ibid.
[44] BC Agrifood industry year in review – 2013. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/statistics/industry-and-sector-profiles/year-in-review/bcagrifood_yearinreview_2013.pdf
[45] BC Cherry Growers Get Access to Chinese Market. June 14, 2015. CBC News. http://www.cbc.ca/news/canada/british-columbia/b-c-cherry-growers-get-access-to-chinese-market-1.2679948
[46] BC Tree Fruit Replant Program, Ministry of Agriculture. http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs/treefruit-replant-program
[47] Central Okanagan Economic Profile for Agriculture, 2015. Invest Kelowna. http://www.investkelowna.com/sites/default/files/uploads/agriculturalprofile_centralokanagan_2015-11-20.pdf
[48] Sweet hopes for cherries in Chinese market. June 18, 2014. Kelowna Daily Courier. http://www.kelownadailycourier.ca/news/article_776381d0-f72d-11e3-b47d-0017a43b2370.html

However, in 2014, local prices for cherries averaged $1.48/lb wholesale, whereas shipments of cherries to China garnered $3.50 to $4.00/lb[49].

Table 8. Number of farms and hectares of apples and cherries in the Central Okanagan[50].

Tree Fruits (Total farms reporting and ha)						
	2001	2001 (ha)	2006	2006 (ha)	2011	2011 (ha)
Apples	384	2,336	330	1,683	268	1,568
Sweet cherries	145	209	150	295	156	599

Capital Investments/Inputs

Cherry facility and equipment start-up requirements for 50 acres of cherries:

- Land will need to be purchased or leased: 50 acres at $100,000 per acre is $5 million;
- Start up costs will include purchase of irrigation, wind machine, and harvesting equipment: approx. $200,000;
- A small cherry sorting and packing plant could be centralized on one site for approximately $100,000;
- The trees are planted on an open field suitable for machine planting at a density of 272. Self-pollinating trees are planted per acre @ $10 per tree: $136,000.
- Total start-up: $436,000 (not including land).

Marketing, sales, and regulatory:

- Membership to the BC Fruit Growers Association, BC Cherry Association, BC Tree Fruit Marketing Board may be required;
- Investigation into permits and licenses for exporting a portion of yields required;
- Local permits and licenses for agri-tourism activities may be required;
- May require dedicated parking for agri-tourism activities; and
- Additional sales of farm gate vegetables and fresh eggs grown on-site may help to attract customers.

Potential Profits and Losses

A typical expectation of profit from a cherry establishment was calculated by Hinman and Hoeheisel (2008)[51] for a 10-acre parcel in central Washington State. These figures are representative of the US, therefore some adjustments may be required for BC. Their calculations assume that planting is done on good soil and no crop loss during the establishment years due to adverse weather or other factors:

- Year 3: 1.5 tons/acre
- Year 4: 5.5 tons/acre
- Year 5: 7.5 tons/acre
- Mature: 9.0 tons/acre

Therefore, 50 acres of mature sweet cherries can be expected to provide yields averaging 110,000 kg. This will fluctuate year-to-year depending on weather and pest conditions. Using 2014 prices for cherries of $1.48/lb (local, wholesale) and $3.50/lb (export, wholesale), an average price of $2.50/lb was used to calculate expected profits. This is likely a conservative underestimate as many of the cherries can be sold directly at the farm gate for higher prices, but it provides an estimate nonetheless.

Gross Returns @ $2.50/lb are:

- Year 3: $ 7,500 per acre
- Year 4: $27,500 per acre
- Year 5: $37,500 per acre
- Mature: $45,000 per acre

[49] BC Cherries on the rise, May 27 2015. Peter Mitham, Good Fruit Grower. http://www.goodfruit.com/exports-benefit-b-c-cherry-growers/
[50] Agricultural census data, Statistics Canada. Central Okanagan Census Division.

[51] H. Hinman and G.-A. Hoeheisel, 2008. Cost of Establishing and Producing Sweet Cherries in Central Washington in 2007. Washington State University – Extension

Commercial yields begin in year 3 and by year 5, the assumption is made that the orchard is fully established. At this point, it is assumed that the orchard has 20 more years of productive life with an average annual yield of 9 tons per acre. At 50 acres the farm could be seeing gross revenues of $2.25 million per year.

The costs of establishing and operating a cherry orchard are not insignificant, however at these returns, even the high cost of land at $100,000 per acre could be repaid over the medium-long term. Long term leases would further reduce land costs. Ongoing operational costs include:

- Labour (including seasonal farmworker housing): $165,000
- Machinery and equipment maintenance: $10,000
- Sorting and packing building operation: $40,000
- A food-grade kitchen to make jams, pies, and other value-added products to be sold at the farm gate: $50,000
- Administrative and overhead costs (e.g. accounting, insurance): $100,000 and
- Irrigation and electricity costs: $80,000.
- Total: $610,000

Therefore a rough estimate of annual net revenue on 50 acres of sweet cherries would be: **$2.25 million - $610,000 = $1.64 million.**

5.3.3 SCENARIO 3 – MIXED PRODUCTION

Table 9. Summary of crops in Scenario 3.

Scenario 3	Area (acres)
Mixed herbs	Polyhouses
Mixed vegetables & flowers	30
Blueberries	10
Poultry, honey bees, and small livestock	15
Mixed - use (incubator farm sites, community gardens)	5
Total	**60**

Description of the Operation

This third scenario provides a wider diversity of crop cultivation and focuses on greenhouse herbs, mixed vegetables, blueberries, flowers, and egg production (Table 9). The site would include three 3,000 square foot polyhouses for herb and vegetable seedling starters. A market mix of flowers could be planted for cutting and selling bouquets at the farm gate, or a specific variety (such as sunflowers) could be planted to create a value-added product (such as seeds).

Recent Market Trends for Mixed Herbs, Vegetables, and Blueberries

There is a growing potential for other agricultural products grown locally, tied closely to the interest in buying locally and an interest in future food security. Local research completed during the West Kelowna Agricultural Plan indicated that there is demand for more local food choices, expanding into niche or specialized markets, or those suitable for culinary tourism. This is in line with findings within the RDCO over the last census period that show increases in vegetable production[52].

There are no large-scale blueberry producers in the Central Okanagan, however the demand for local berries is likely easily met with the 10 acres of suggested production. It is expected

[52] Central Okanagan Economic Profile for Agriculture, 2015. Invest Kelowna. http://www.investkelowna.com/sites/default/files/uploads/agriculturalprofile_centralokanagan_2015-11-20.pdf

that the berries will be sold directly at the farm gate, through U-pick, and some local retailers.

Table 10. Amount of land (ha) and greenhouse area (m2) in vegetable production (2001 - 2011) in the Central Okanagan.

Total land area of vegetables (hectares)		
2001	2006	2011
95	110	163

Greenhouse vegetable production (m^2)			
	2001 (m^2)	2006 (m^2)	2011 (m^2)
Greenhouse area	413	4,419	1,435

Capital Investments/Inputs

Start up costs will include:

- Land at $100,000 per acre (total of $5-6 million);
- Purchase of blueberries, seedlings, chickens, pruning, and harvesting equipment: $200,000;
- Fencing, berry netting, and irrigation: $150,000;
- Polyhouse(s): 3 @ $10,000 each is $30,000; and
- A wash station and packing/bagging facility could be centralized on one site: $20,000.
- Total start-up: $400,000 (not including land).

Marketing, sales, and regulatory:

- Membership to the BC Blueberry Council, BC Vegetable Marketing Board may be required;
- Investigation into permits and licenses for exporting a portion of yields required;
- Local permits and licenses for agri-tourism activities may be required;
- May require dedicated parking for agri-tourism activities; and
- Additional sales of farm gate vegetables and fresh eggs grown on site may help to attract customers.

Potential Profits and Losses

Mixed herbs assumptions:

- Greenhouse production in three 3,000 sq.ft. polyhouses for a total of 9,000 sq.ft.;
- Assumes that 100% of the herb yield will be sold direct. To further increase value, some of it could be dried and sold as dried herbs or in sauces, marinades, etc.;
- For simplicity, revenue calculations have been developed with a focus on growing popular mixed herb crops (e.g. basil, parsley, mint, thyme and dill) and using fresh herb sale price points;
- Based on the climate, if a polyhouse is used it is possible to expect 3 to 4 crop rotations per year. This is taken into consideration in the yield estimates (650 lbs/yr of fresh herbs per rotation is the conservative estimate)[53];
- Market value prices for organically-grown fresh herbs are $2.00/oz or $32/lb direct market[54]; and
- Gross herb revenues are expected to be approximately $60,000 per year.

Mixed vegetable and flower assumptions:

- 30 acres of mixed vegetables and flowers are planted using organic methods and crop diversity is prioritized;
- Due to the mixed use nature of this scenario, providing yield estimates is a challenge, so these calculations should be interpreted as high-level estimates;
- Calculations are based on a sales plan whereby 60% of the yield will be sold direct market (farm gate, farmers market, or CSA) and that 40% will be sold wholesale to local retailers; and
- If managed by a team of skilled growers, revenue of mixed vegetables and flowers can be estimated at $30,000 per acre per year. At 30 acres the annual gross revenues will be therefore be $900,000.

[53] ATTRA Organic greenhouse production of herbs. https://attra.ncat.org/attra-pub/summaries/summary.php?pub=53
[54] SPUD produce price listing. http://www.spud.ca/catalogue/catalogue.cfm?lid=1&S=1&CG=1&op=C81&Spif=VAN_Organic%20Vegetables

Blueberry assumptions:

- The 10 acres of blueberry bushes are mature and produce berries right away;
- Cost of plants to establish 10 acres will be approximately $150,000 (includes plants and soil amendments);
- It is possible that poor yields due to young blueberry bushes in the first 2-3 years may result in lower than anticipated revenues;
- Assumes that 100% of the yield will be sold direct market (i.e. farm gate);
- A high level of horticultural training and skills are required to ensure high yields;
- Good site selection and preparation will be required, especially to ensure that the correct soil pH is achieved as blueberry plants require slightly acidic soils;
- Particular care will need to be paid to plant health if organic principles are followed. Blueberries are susceptible to fungal, viral, and bacterial infections; and
- Gross revenue of blueberries can be expected at $75,000 per acre or $750,000 for 10 acres.

Egg production assumptions:

- A flock of 99 hens is kept to sell farm gate eggs;
- The chickens produce 1,700 dozen eggs per year;
- Eggs are sold at a cost of $5 per dozen;
- Gross revenue of eggs is $8,500 per year.

Estimated ongoing operational costs will include

- Labour: $200,000;
- Pest management and predator/bird deterrents: $50,000;
- Chicken feed and veterinary needs: $5,000;
- Transportation (fuel, vehicles) for deliveries: $10,000;
- Irrigation and electricity: $80,000; and
- Administrative and overhead costs: $100,000;
- Total operational costs: $415,000

Therefore, a rough estimate of annual net revenue on 50 acres of mixed production would be:
$1.72 million - $415,000 = $1.30 million.

Table 11. Summary of gross revenue estimates for Scenario 3.

Product	**Potential Annual Revenue**
Mixed herbs (fresh)	$60,000
Mixed vegetables and flowers	$900,000
Blueberries	$750,000
Chicken eggs	$8,500
Gross revenue	**$1,718,500**

5.4 SWOT ANALYSIS FOR THE THREE SCENARIOS

It is useful to compare the estimated start-up costs, profits, and losses from each scenario. Start-up costs, including equipment, irrigation, processing buidings, and other capital inputs are comparable for each scenario, with the cidery being the highest due to processing needs. The potential for overall revenue is highest with the cidery, however it also presents the highest annual operating costs, a large portion of which is attributable to alcohol-related taxes. Each scenario is economically viable in that a profit is expected within the first five years of operation. However, it is important to note that the cost of land and existing improvements (buildings) are not included in the calculation of capital inputs. This is because a range of tenure options are possible, of which fee simple purchase and ownership is only one option.

Table 12. Summary of capital inputs, operational costs, and potential revenues.

Scenario	Capital Inputs (Start Up)	Operating Costs (Annual)	Gross Revenue (Annual)	Net Revenue (Gross Rev. - Operating Costs)
1) Cider apples and cidery	$1,765,000	$765,000	$3,080,000	$2,315,000
2) Sweet cherries	$436,000	$610,000	$2,250,000	$1,640,000
3) Mixed production	$400,000	$415,000	$1,720,000	$1,300,000

Additional attributes of the three scenarios are summarized in a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis table:

Table 13. SWOT Analysis of the three scenarios.

Scenario	Strengths	Weaknesses	Opportunities	Threats
1) Cider apples	Great growing location (soil and climate) and high quality inputs (BC apples). Young industry, entrepreneurial mindset. Existence of local wineries (wine trail). Highest rate of return of the three scenarios.	Unpredictable supply chain (may not have enough cider apples during first few years). Lack of local processing, bottling (will need to be contained on site). Most capital intensive start-up costs.	The demand for cider is strong and rapidly growing. Increasing interest in local food and food products.	Competition from local wineries for visitors. High taxes related to GST, PST, and alcohol. Lots of permitting and licensing requirements.
2) Sweet cherries	Growing industry. High quality cherries grown locally. Lack of local cherry orchards for locals to visit and buy from the farm gate. Support from the BC Fruit Growers Association.	Will take 5 years for cherry trees to mature. Dependence on export market can be risky	Can take advantage of a new export market (China). New local processing facilities in the Central Okanagan. Tree fruit replant program from the BC government may offer financial support. Canning (jams) and production of goods (pies, ice cream) could be co-located on site.	Competition from other new cherry orchards coming into production to take advantage of new export markets.
3) Mixed production	Many of the proposed crops do not require an overly high level of input costs. Soil and climate is suited to a wide range of crops. Proximity to market (residential buildings nearby) may translate into high farm gate sales. Most crops will not take long to mature.	Some of the proposed crops are not grown much locally in the Central Okanagan (particularly blueberries). Overall rate of return will be lower than for orchard production.	May be able to partner with local community garden groups and offer garden plots for rent. Lots of value-added product opportunities as a result of producing a range of crops. Potential to offer U-picks and other agri-tourism events.	Lack of processing facilities in the area for blueberries. Locals may not be accustomed to buying berries, herbs, and vegetables locally. May take extra marketing efforts.

5.5 SUSTAINABLE AGRICULTURE BEST MANAGEMENT PRACTICES

Sustainable agriculture requires that soil, water, and air quality be maintained. Some farm practices have the potential to deplete the soil and contaminate air and water. Likewise, external pressures can also influence farming, such as the presence of invasive species. Many of the potential negative impacts of farming can be greatly reduced by the use of Best Management Practices (BMPs).

As part of BC's Environmental Farm Plan (EFP), the BC Ministry of Agriculture has partnered with the BC Agriculture Research and Development Corporation to produce and publish detailed reference guides regarding BMPs[55]. Farms who go through the EFP process, which is free, are eligible to apply for funding to help cover the costs of equipment, infrastructure, or other resources required to complete BMPs at the farm level. As part of the process of taking Westbank Centre to a higher level of agricultural production, following the EFP process is highly recommended.

The following table lists some BMPs that are applicable to Westbank (in no particular order). It is based both on results from literature research, experience with EFP factsheets, and observations made based on a visit to the Westbank Centre site. Other BMPs worth considering, once farm activities are underway, relate to waste management (compost, manure, fertilizers (if applicable), wood waste), fuel storage, crop storage, soil amendments, and nutrient applications for specific crop types. These are available from the BC Ministry of Agriculture.

[55] BC Ministry of Agriculture and Lands, 2010. BC Agricultural Research and Development Corporation. Canada-BC Environmental Farm Plan Program: Reference Guide. For use with the publication: Canada-BC Environmental Farm Plan Planning Workbook. Published by BC Agricultural Research and Development Corporation. Prepared by BC Ministry of Agriculture and Lands. 3rd Ed. February 2010.

Table 14. Relevant Best Management Practices.

Issue	BMP(s)	Description
Poor drainage	Site-specific drainage systems	A drainage system may consist of a combination of land grading, ditches, subsurface drainpipes and pumps. A well-designed system will improve the trafficability of soils, reduce the delay time for re-entry to fields after rainfall, improve root growth, and increase the growing season. The following practices can be implemented: • design drainage systems for specific soil and plant requirements; • install interceptor drains to reduce overland flow; • grade land to eliminate low areas where water can pond; • install permanent drop structures in channels to allow water to flow gently without causing erosion.
Water availability	Efficient irrigation systems	Irrigation should occur only to replace soil moisture. Drip or sensor-based trickle irrigation systems are most efficient.
Agricultural pests	Integrated Pest Management (IPM)	IPM is a farming approach that relies on the balanced use of practices to protect crops, animals, and the environment from the adverse impact of pests. IPM does not necessarily mean that chemical pesticides are never used nor does it result in a complete elimination of all pests.
Invasive species	Physical barriers and ongoing maintenance	Invasive pests include both plant diseases and weeds. Transfer is common in areas where farm equipment moves back and forth between fields and farms. The Invasive Species Council of BC is a great source of information and resources on managing invasives.
Topography	Contour planting	Topographic conditions play a major role in whether a site is prone to water and wind erosion. In general, the greater the slope the greater the risk that erosion may occur. Generally speaking, orchard trees do quite well on uneven terrain. Grape vines can tolerate quite steep slopes.
Nutrient management	Manure, compost, and fertilizer application	Nutrients should be applied during the pre-planting or planting stage but not during the harvesting stage. Manure and inorganic fertilizers should be applied during periods of dry to moderately wet weather but should be avoided in fall and early winter when loss of nitrogen to groundwater through leaching is greatest.

06 A WESTBANK CENTRE FOOD HUB

Figure 6. Connections to the broader community (image credit: http://www.localfoodhub.org)

Incorporating direct sales and aspects of agri-tourism into the business plan may provide additional opportunities to capitalize on the beautiful location of Westbank Centre, the success of the existing Westside Wine Trail[56] and the Westside Farm Loop[57] initiatives, and nearby recreational trails, such as those in Glen Canyon Regional Park. Providing a small area for community gardens may also increase trafficability to the site and raise the profile of the farming activities. There is therefore strong potential to create a food hub at the Westbank Centre site, which would have multiple connections to the broader community. The hub would be a centralized building (or small number of buildings) on the site that would be used for processing and storage facilities, could provide a one-stop area for product drop-off and distribution, as well as tool and equipment storage, and meeting space.

6.1 CENTRALIZING MARKETING AND SALES AT THE FOOD HUB

An opportunity exists to create a brand that would encompass many characteristics of farmland and food production in Westbank Centre. Produce, beverages, and value-added products created by a group of farmers could then be sold under an umbrella label and/or slogan, throughout local and regional retailers and at the farm gate. The consistency in the branding would increase the visibility of Westbank products and improve recognition amongst consumers as to the strength of the agricultural sector within the community.

6.1.1 DIRECT SALES: U-PICK, FRUIT STAND, FARM GATE, AND COMMUNITY SUPPORTED AGRICULTURE (CSA)

Direct sales are popular with both producers and consumers. Producers retain the largest proportion of revenues by selling directly to customers, thereby effectively eliminating the middle man. Conversely, locals enjoy the opportunity to purchase directly from farmers in order to get a better understanding of how their food is grown. A farm gate “hub” for fruit, berries, vegetables, and fresh eggs grown both onsite and by other nearby West Kelowna farms will attract additional customers. U-Picks present another opportunity for the producer to increase the level of income retained. Although it can require more management efforts, a U-Pick for tree fruits, blueberries, or other products would benefit the operation financially.

[56] Westside Wine Trails website. http://thewestsidewinetrail.com
[57] Westside Farm Loop website. https://westsidefarmloop.wordpress.com

A Community Supported Agriculture (CSA) operation is a pre-arranged agreement between a farmer and a specific number of people to purchase a box of produce (or products) from the farm on a set schedule. The customer essentially pre-purchases a share of the harvest. For some CSAs, the farm delivers the box to the customers and for others, the customers come to the farm to pick up their box. CSAs can be designed to fit the needs and the farm enterprise. A big difference between CSAs and other direct marketing methods is that the customers pay for a season of produce at the beginning of the season. While this provides guaranteed cash-flow, it also puts pressure on the farm enterprise to deliver the farm products in a timely manner.

6.1.2 SELLING TO LOCAL STORES AND RESTAURANTS

It is challenging for small-to-medium sized farms to meet the needs of large retailers. Large retailers are looking for a scale and consistency of supply that small-and medium-sized farms have difficulty providing. Nonetheless, there has been growth in medium-sized farm markets that focus on selling local produce when available. An increasing number of restaurants in the area are also seeking locally grown products. It is important to be very clear on the type, size, quantity and timing of products a restaurant needs before committing to supply.

The Kelowna Farm to Table map, published by Tourism Kelowna[58], notes the following West Kelowna-based establishments that serve and celebrate local products:

- Old Vines Restaurant
- Bonfire Restaurant
- Terrace Restaurant
- Paynter's Fruit Market
- Grizzli Winery
- Mission Hill Family Estate Winery

[58] Tourism Kelowna. http://www.tourismkelowna.com/do/farm-to-table/

Photo: Rootdown Organic Farm

- Mt Boucherie Family Estate Winery
- Quail's Gate Winery
- Volcanic Hills Estate Winery

There are an even greater number of establishments that would likely welcome fresh local produce over the bridge in the City of Kelowna. This location provides a multitude of selling possibilities and the proximity of this large population, one that supports local food and seeks out restaurants that serve local foods, should not be underestimated.

6.1.3 PROCESSING FOR VALUE-ADDED PRODUCTION

It is expected that in addition to the raw product, processing goods through canning (jams, pickles), fermenting, and drying goods (herbs) could be co-located on site. A food hub could provide an opportunity for farmers to rent space and equipment to create value-added products. The ALC's regulation permits the processing of farm products in the ALR provided 50% of those products arise from the farm operation (or from a co-operative farm operation). Processing facilities on ALR that are not associated with a farm, or have off farm inputs greater than 50%, require that an application be submitted to the ALC. Provided these conditions are met, a centralized farm hub would have the ability to provide the following services in one location:

- Washing and packing;
- Canning, preserving;
- Fermenting;
- Bottling;
- Baking; and
- Cold storage.

Support systems and infrastructure for collecting, storing, processing, and distributing food to major retail markets have long been established and operate efficiently at the regional, provincial and national levels (Sysco and Overwaitea are examples). Despite support from local retailers, producers may have difficulty accessing this distribution system because:

- Many producers are too small to meet production requirements of larger scale retail outlets;
- Many producers in rural and outlying areas cannot efficiently transport products to a distribution point or center; and
- There may be information gaps around labeling, quality control, traceability, and food safety.

Additionally, having to distribute farm products to retailers and local restaurants individually can be problematic for farmers by taking them away from their farms and increasing costs dramatically for vehicles and fuel. Local restaurateurs and retailers are often unable to travel from farm to farm picking up agricultural products, usually due to time constraints. Similarly, residents are also unable or unwilling to visit each farm to buy their products at the farm gate, opting instead to buy products in the grocery stores at times that are convenient for them. Therefore, a centralized processing area could provide an ideal location to facilitate distribution of products to local retailers and restaurants, by providing one drop-off and pick-up location.

6.2 IMPROVING PUBLIC KNOWLEDGE THROUGH THE FOOD HUB

Obtaining first hand experience on a farm, whether through a tour or a more hands-on farm stay, can have lasting educational impacts on members of the public. Many opportunities exist to incorporate agri-tourism into West Kelowna's agricultural lands, regardless of the scenario chosen. Recent draft bylaw standards by AGRI have provided stronger direction regarding activities that can be considered agri-tourism.

6.2.1 AGRI-TOURISM ACCOMMODATION

The City of West Kelowna allows, through zoning, short-term agri-tourism accommodation rentals on ALR. This type of accommodation could be provided as a B&B, small inn, or other small-scale establishment. Due to the proximity of the sites to medium-density multi-family housing, camping and RVs are not recommended. A similar multi-room accommodation is provided at the Burrowing Owl Winery in Oliver, however, an online scan (tripadvisor, VRBO, AirBnB) did not result in any opportunities found for farm-based accommodation in West Kelowna, indicating that there is room in this sector for this type of accommodation.

Currently, agri-tourism accommodation is permitted on A1 (Agricultural) zoned land, provided that:

- It is conducted within a principal single detached dwelling;
- The maximum amount of guest rooms does not

exceed ten (10) for parcels larger than 3.8 hectares (9.4 acres) and four (4) for parcels less than 3.8 hectares (9.4 acres); and
- Accommodation is only rented for periods less than 1 month.

Changes to the agri-tourism accommodation regulations are being considered that would add the following requirements:

- For parcels equal to or greater than 2.0 hectares (4.9 acres) and less than 7.6 hectares (18.8 acres) the total gross floor area of guest rooms in an agri-tourism accommodation facility shall not exceed 120 m^2 (1,292 ft^2). This does not include washrooms and/or common areas.
- For parcels greater than 7.6 hectares (18.8 acres) the total gross floor area of guest rooms in an agri-tourism accommodation facility shall not exceed 300 m^2 (3,230 ft^2). This does not include washrooms and/or common areas.
- Agri-tourism accommodation is not permitted on parcels less than 2.0 hectares (4.9 acres).

6.2.2 TASTING LOUNGES

Under the ALC Act, cideries, breweries, and wineries are permitted to provide up to 250m2 for an indoor/outdoor lounge (seating capacity is for approximately 130). A tasting room, washrooms, and kitchen (limited food sales) are all allowed. Tasting tours are popular throughout the Okanagan Valley.

6.2.3 FARM TOURS, FEASTS, AND FESTIVALS

Farm tours could offer the experience of visiting the production facilities to learn about the production process. The Westside Farm Loop tour resource that is currently available to visitors could be updated to include this new Westbank Centre site. Seasonal (summer) activities similar to berry farms in Langley (e.g. Driediger Farms) or BXPress in Vernon could be included. These value-added activities could include an ice cream stand, fruit pie stand, or farm animals for viewing / petting. A new experiential farming opportunity could benefit from the local Westside Wine Trail that is already established. In many other regions, celebratory events are held to showcase local products. Depending on the type of crop production chosen there is the potential to host a cherry festival, cider festival, or other annual harvest-related event.

6.2.4 AGRI-TOURISM SUCCESS STORIES IN THE OKANAGAN

There are many successful agri-tourism ventures in the Okanagan Valley. The following are a selection of these.

Arlo's Honey Farm, Kelowna

Arlo's honey farm has fully embraced agri-tourism. With a slogan of "Enjoy a true farm experience of grass roots beekeeping", the farm offers a Honey Tasting Bar, an interpretive centre, Pollinator Park, Gift Gallery where customers can buy honey, honey products, Bee Basics Natural Skin Care, honey soap, beeswax candles, honey recipe books and other local artisan creations. Arlo's Honey Farm also sells fresh fruit, berries and vegetables in season. One of the most popular farm activities is a one-hour educational tour that describes the honey bee's life, their existence in nature, an understanding of sustainable agriculture, and a close up and personal visit with a working hive. http://arloshoneyfarm.com

Arndt Orchards, Kelowna

Growing quality cherries in the Okanagan since 1946, Arndt Orchards offers a U-pick cherry orchard from early July through mid August. They welcome large groups, including bus tours. Nestled on the Belgo bench overlooking Kelowna, Arnt offers visitors an opportunity to pick from a number of varieties including Sandra Rose, Vans, Stardusts, Lapins, Skeenas, Sweethearts and Staccatos. http://www.arndtorchards.com

The BX Press, Vernon

The BX Press is a new cidery that opened in 2014 on East Vernon Road in the BX region. They have created four hand-crafted ciders that have received an excellent response in their short time under production. The owners are third-generation farmers on that land growing apples that are used in the ciders they produce. The cidery hosts a tasting room on site to sample ciders and, when they are sold out, offer fresh apples for sale as well. They also sell to a number of local liquor stores and restaurants in both Vernon and Kelowna. http://thebxpress.com/

Davison Orchards, Vernon

Davison Orchards is also located on Bella Vista Road in Vernon and is a family business has grown substantially over the last 60 years. There are currently three generations living and working together on the farm. The farm produces a wide variety of tree fruits that they process on site into value-added products such as preserves, baked goods, syrups and much more. They also produce mixed vegetables on site with u-pick options. The family has capitalized on their agritourism capacity by providing a café, store, petting farm, play area and tours for visitors. They employ a large number of individuals from the local community. http://www.davisonorchards.ca/.

Duggan Family Farm U-Pick, Lake Country

The Duggan Family Farm offers a diversity of U-pick opportunities from the first asparagus harvest in April to the the last tomato harvest in late August. Other crops available

for U-pick include: strawberries, raspberries, blueberries, peaches/nectarines, garlic, corn, and herbs.

East Kelowna Cidery, Kelowna

East Kelowna Cider Co. offers tours of the family farm, sharing knowledge & information about the orchard and the cider making process. The cidery is located in suburban Kelowna on an orchard that has been in the Ross family since 1942. The Rosses use dessert apples, including Golden Delicious, Braemar, Fuji, McIntosh and Spartan to make their cider, rather than traditional cider apples. Products include soft ciders: apple, peach, cherry, cinnamon; hard ciders: Ross Hard Apple, & Logger Cider; orchard spiced canned pears, plum butter, apple butter, apricot butter, apple chips, eggs. http://www.tourismkelowna.com/listing/east-kelowna-cider-co/83/

Function Junction Fruit Stand and Double Cross Cidery, Kelowna

The Function Junction fruit stand is located approximately 6 km north of downtown Kelowna. The Cross family has a long history in the Okanagan, having grown apples in this location since 1946. The fruit stand offers farm products including Pure Apple Juice or Double Cross hard ciders, both of which are available for sampling. There is a gift shop, and a 30-minute farm tour on a trailer pulled by a tractor with owner Glenn Cross. Cross Orchards' mission is to provide and promote high quality farm products from the Okanagan while broadening awareness of farming life. http://function-junction.ca

Paynter's Fruit Market, West Kelowna

As a family run business and farm for over 60 years, Paynters Fruit Market, as well as the Paynter family themselves, have become an integral part of the Westbank Community. Through four generations, the first being Henry Paynter who immigrated from England in 1919 at the young age of twelve, sustainable living has remained integral to the family's process. The Paynters maintain direct farm gate sales that the community enjoys year after year. http://www.paynterssfruitmarket.ca/index.html

Pilgrim's Produce, Spallumcheen

Pilgrim's Produce is located in front of Eagle Rock in Spallumcheen. The farm was started in 1991 and is certified through the BC Certified Organic Program by the North Okanagan Organic Association. They grow a variety of fruits and vegetables for farmers markets, u-pick and for Community Supported Agriculture (CSA) customers. They also partner with other local farmers to supplement their production. In 2003, Pilgrim's Produce was given the Armstrong/Spallumcheen Agriculture award and in 2006, the Okanagan branch of BC Institute of Agrologists honoured them as Farm Family of the Year for Outstanding Service to the Okanagan Agriculture Industry. In 2012, the owner, Rob Hettle, was also given the Founder's Award by the Certified Organic Association of BC. Pilgrim's Produce is well-known for mentoring and supporting new and young farmers in the region. http://www.pilgrimsproduce.com/.

Planet Bee, Vernon

Planet Bee Honey Farm and Gift Shop is located on Bella Vista Road in Vernon. The owners have developed a very successful agritourism venture with the following attractions:

- Educational tours of their hives, honey extraction process and bottling process
- Honey tastings
- Tastings of their locally produced mead
- On-site gift shop where you can purchase all of their products

Planet Bee is open year-round, but they suggest stopping by during the summer to see the bees in action. Their educational tours provide a way for consumers to learn about agriculture and honey production as well as bee behaviour. http://www.planetbee.com/.

The Village Cheese Company, Armstrong

The Village Cheese Company is located in the City of Armstrong. They are a small family-owned cheese company that makes artisan cheese from local whole milk from the Okanagan Valley. They do all of their own pasteurization and packaging in their cheese plant in Armstrong and operate an extensive store with other local products available for purchase. They also operate a small café on site. Village Cheese provides products for other retail outlets and sell at the local farmers markets in the region as well. They offer tours of their facility and are open 7 days a week. http://villagecheese.com/.

6.3 FOSTERING COMMUNITY PARTNERSHIPS THROUGH THE FOOD HUB

Community partnerships may be fostered through a community food hub through the development of relationships with schools, community gardening associations, food access organizations (food banks), and other non-profit groups. Community garden plots are included as a small, albeit key, element in the *Westbank Centre Agricultural Plan*. While taking up a relatively small amount of total space (proposed at 0.5 – 1 acre), the inclusion of this feature will enhance the community's connectivity to existing local agricultural and food security initiatives. Community garden plots are usually small raised beds that are rented out to members of the community who would not otherwise have the opportunity to garden. Residents of nearby multi-family residential developments on Brown Rd may qualify to have priority access to the garden plots.

An opportunity to partner with the Central Okanagan Community Gardens (COCG) society exists to manage this component of the plan. The COCG is a non-profit society with several gardens located throughout the central Okanagan area. The COCG works with local governments to make garden space available to local residents. The COCG was established in 2002 to help neighborhoods and communities create sustainable green spaces for gardening, food production, gathering and education. To date, they have constructed 16 community garden sites within the Central Okanagan region, including two in West Kelowna:

- Shannon Woods Community Garden was built in the spring of 2011 and includes 29 garden plots, a shed, tools, water access and compost bins. The garden is part of the new Shannon Woods Park Rejuvenation Project.
- Westbank Town Centre Community Garden was built with funding from RDCO through Provincial Grants. This garden has 56 plots, including a garden for George Pringle Elementary School.

According to CWK staff, these garden plots are in high demand and often include a waitlist for those interested in joining the community garden. With local demand being high for access to community gardens, providing a dedicated area in the *Westbank Centre Agricultural Plan* for community garden plots is recommended. These plots can be rented out for a nominal fee to help cover costs such as shared tools, water access, and shed space. Solutions exist to motivate property owners to dedicate small areas to community garden plots. For example, Council may wish to consider providing in-kind support by way of waiving property taxes for the small portion of land (0.5 – 1.0 acres) dedicated to the community garden plots.

07 LAND TENURE OPTIONS

Land tenure refers to the type of legal arrangement made on a given parcel of land. Sometimes in order to stimulate the agricultural production of underutilized farmland alternatives to fee simple ownership need to be considered. In the case of farming, leasing and licensing are the most comment types of tenure arrangements. These are described in detail in this chapter, with an emphasis on the advantages of long term leases. Finally, alternative farmland management opportunities such as Community Farms, Incubator Farms, and Co-operatives are discussed.

7.1 FARM CLASS STATUS BENEFITS

One of the main benefits of bringing farmland into production is to receive the benefits associated with Farm class status through BC Assessment. These benefits are conferred to the landowner (regardless as to who is farming), and are primarily financial in nature. The difference between property taxes paid by a landowner with Farm class status vs. without vary, but can be significant. Property owners who do not farm, but rather lease their property to farmers, can also obtain this benefit. In order to qualify for Farm class status, the annual farm gross revenues must be at least $2,500 for parcels between 2 and 10 acres or $2,500 + 5% of the agricultural land value for farms larger than 10 acres. This agricultural land value is not equivalent to market value, rather it is calculated by BC Assessment.

In terms of other benefits for the farmer and landowner, there are other additional policies and regulations that come into play once a property has obtained Farm class. These include[59,60]:

- Protection as a farm under the *BC Farm Practices Protection Act*;
- Exemption from PST;
- *Income Tax Act* benefits such as exemption on capital gains tax when property is sold (if the landowner is also the farmer)[61];
- Qualification for Environmental Farm Plan funding through the Growing Forward program;
- A reduction in fuel tax;
- Farm vehicle licensing; and
- Eligibility for BC Agricultural Council Farmer ID

Property owners who don't want to farm may lease their land to a farmer and still obtain Farm class tax status. Leased land will get Farm class tax status if income thresholds are met by the farmers leasing the land. The income and sales requirements are based on the area used for the farm operation. Therefore, a farm operation can consist of a combination of owned and leased parcels of varying sizes but which are all operated as an integrated unit[62]. The total land area (owned + leased) is considered when determining the threshold[63]. There is no impact on the tax rate on the residence or other buildings, which are classed Residential.

An ALR Landowner Survey[64] conducted by Ipsos Reid for Metro Vancouver in 2013 determined that for property owners leasing their land to a farmer, experiences with leases have been predominately positive, and those who lease generally do not have anything negative to say about leasing. The few challenges that are mentioned include managing the lease (ensuring the land is appropriately maintained), difficultly finding an appropriate lessee, and ensuring compliance with land use/environmental restrictions.

[59] BC Ministry of Agriculture and Lands, 2007. Farmland classification in the Fraser Valley (1974-2007).
[60] KM Consulting, 2014. Farm Property Tax Investigation in the Metro Vancouver Region.

[61] Capital gains on a farmer's principal residence can be all or partially exempt from tax. Each individual taxpayer is entitled to realize $800,000 of capital gains tax-free on qualifying a farm property during their lifetime. For more information see BDO Canada LLP's *Tax Planning for Canadian Farmers* (2014). http://www.bdo.ca/en/Library/Services/Tax/Documents/Tax-Bulletins/Tax-Planning-for-Canadian-Farmers.pdf
[62] BC Assessment, Farm classification in BC, 2014.
[63] BC Ministry of Agriculture and Lands, 2007. Farmland classification in the Fraser Valley (1974-2007).
[64] ALR Landowner Survey. Prepared for Metro Vancouver by Ipsos Reid. 2013. http://www.metrovancouver.org/services/regional-planning/PlanningPublications/ALR-LandownerSurveyReportJan2013.pdf

Data from BC Assessment (see Table 12) indicates that the vast majority farms with Farm class status in the City of West Kelowna are successful. The income ratio is an indicator of the level of gross farm income being reported. For a farm parcel between 2 and 10 acres in size, a ratio of 1.0 indicates that exactly $2,500 was earned whereas a ratio of 5.0 indicates $12,500 was earned. Nearly a quarter (22%) of West Kelowna farms are making income ratios of over 10.0 (over $25,000 in gross earnings).

	0.8 - 4 hectares (2 - 10 acres)	**> 4 hectares (> 10 acres)**
Income Ratio	$2,500	$2,500+5%
0.00 - 0.999	2	5
1.000 - 1.249	7	3
1.250 - 1.499	5	2
1.5 - 1.749	2	2
1.75 - 1.999	2	
2.000 - 2.999	7	5
3.000 - 4.999	4	10
5.000 - 9.999	7	12
Total farms	**39**	**46**

Table 15. Farm income ratios of operations with Farm class status in the City of West Kelowna[65].

7.2 FARMLAND LEASES

Purchase to own (fee simple ownership) is not the only farmland tenure option in BC. Approximately 40% of farmland in the province is leased. Some of this land is used primarily for rural residential purposes by the owner and the balance of the farmland is leased for cropping or forage production. Leasing is an excellent way for farmers to expand production and for start-up farmers to get access to land. It also allows the property owners to reap the benefits of Farm class status without having to do the work of farming themselves.

A lease is the most desirable type of long-term farmland access agreement for a farmer because it creates a situation very similar to that of owning the land. A lease gives a person all of the use and occupation rights of a landowner to use either a full parcel or portion of a parcel of land for a determined period of time in exchange for rent, or other forms of payment, paid to the landowner. The property owner retains the right to dispose of the land (sell it) while the tenant has exclusive possession of the land under the lease and the responsibility of maintaining it according to the terms in the lease. When the lease is over, the land reverts to the landowner[66].

Leases on part of a parcel of land and longer than three years, or that have the option to be extended past three years, are considered subdivisions under Section 73 of the *Land Title Act*[67]. Before the lease can be registered, the subdivision process must be followed and granted approval by an approving officer. If the property is in the ALR, permission for subdivision is required from the ALC. A leasehold subdivision expires at the end of the lease, unlike a fee simple subdivision. When registered, leases "run with the land," which means that when the land is sold, the lease is transferred to the new landowner along with the title to the land. A registered lease also ensures that the agreement is legally recognized as a lease and cannot be interpreted as another type of agreement, such as a contract, that does not give any rights in land. A single lease on the entire parcel of land is not considered a subdivision, and permission from an approving officer and the ALC is not required.

A lease terminates:

- At the end of the specified term in the lease;
- When the tenant voluntarily gives up the lease with permission of the landlord (surrender);

[65] Farm income ratio data as reported by farm class operators. BC Assessment, 2015.

[66] Wittman, H. 2009. Community Farms in BC: Building Local Food Systems for Sustainable Communities. Community Farms Survey Report. A collaborative effort between FarmFolk/CityFolk, The Land Conservancy of BC, and Simon Fraser University http://ffcf.bc.ca/programs/farm/CFPdocs/community_farms_in_bc_survey_report.pdf.

[67] BC Land Title Act. http://www.bclaws.ca/Recon/document/ID/freeside/96250_00

- When the tenant purchases the leased property from the landlord (merger);
- When the landlord defaults on any mortgage on the land and the mortgagee begins foreclosure proceedings (foreclosure);
- When the landlord gives notice to the tenant (notice);
- When the landlord re-enters because the tenant has not been following their obligations under the lease (re-entry); and
- When a court orders the lease terminated (court order).

7.2.1 IMPORTANCE OF LONG TERM LEASES

The ability for a farmer to lease land for a long tenure period is important. It provides security, which makes investing in the farm in terms of infrastructure (drainage, irrigation, fencing) and equipment less risky and more appealing[68]. It also provides the farmer with leveraging when attempting to access financing through a lending institution.

This need for security is especially important for crops like fruit orchards or blueberries that may take several years to mature, so initial yields may be low. Farmers with long term leases know that resources spent on infrastructure will pay itself back over time, therefore having tenure on a piece of land that enables that return on investment is important for financial viability.

A long-term lease agreement typically has a term of 10 years or more. Legally, a long-term lease agreement can be up to 99 years[69]. Long-term leases provide more security to the farmer, allowing them to make long-term decisions. Farmers may be more likely to invest in improving the soil, undertaking conservation measures, or building structures if the term will enable them to achieve the business benefits of their investment and stewardship[70].

A rolling lease is one in which the term rolls over annually. In other words, at the end of the first year of a five-year lease, the tenant still has five years to go. This is an attractive option for both landowner and tenant in many situations.

The following table lists examples of infrastructure and housing that farmers with long term leases will typically direct investments towards[71,72,73,74].

Infrastructure Type	Description
Fencing	Fencing provides some amount of security from crop damage (due to humans and/or wildlife). It is also needed along riparian areas.
Drainage	Producers will be more likely to invest in perennial plants and will be more confident about seeding dates and yield expectations if drainage is in place.
Irrigation systems	A secure water source is very important. The producer will want to know where the water is coming from (groundwater or creek-fed), if the water is regularly tested, and if water costs for irrigation will be in addition to the lease/licence rate.
Cold storage and dry storage	These areas are especially important to maintain produce quality between harvest time and delivery to markets and/or clients.
Sheltered area for processing	An area away from wind and rain is key to ensuring that the quality of the product isn't compromised after harvest during washing and packing.
Secure equipment storage	Need to have a locked building that is secure to store equipment. It's surprising how many tractors get stolen.

Table 16. Infrastructure needs for long term leasehold farming

[68] Shirlene Côte, farmer. Personal communication.
[69] Land For Good: Farmland leasing for private landowners – a short guide http://www.thegreenhorns.net/wp-content/files_mf/1344531282FarmlandLeasingforLandownersShortGuide.pdf
[70] A Guide to Farmland Access Agreements. Farm Folk City Folk and The Land Conservancy BC, 2009.
[71] FarmFolk/CityFolk, 2010. Community Farms Network. http://www.communityfarms.ca/
[72] Richmond Food Security Society. 2011. Small farms resource guide. http://resourcemanual.wordpress.com/
[73] Wittman, H. 2009. Community Farms in BC: Building Local Food Systems for Sustainable Communities. Community Farms Survey Report. A collaborative effort between FarmFolk/CityFolk, The Land Conservancy of BC, and Simon Fraser University http://ffcf.bc.ca/programs/farm/CFPdocs/community_farms_in_bc_survey_report.pdf
[74] Hannah Cavendish-Palmer, Shirlene Côte, Amy Kitchen. Personal communication.

Short Term Leases

A short-term lease agreement is typically for one year, but could be for two or three years. These offer both landlord and tenant flexibility and can be used as a trial period as both tenant and landowner determine if the match will be successful. The drawback is that it's difficult to make longer-term investments and decisions in this short time frame. Landlords with such a short lease should consider how they will promote tenure confidence. This may include agreeing to pay for infrastructure improvements. It is worth noting that short-term leases are not appropriate for producers wishing to obtain organic certification, which requires a three-year transition period.

Lease with Option to Buy

In certain circumstances, for instance when farmland is up for sale but has no immediate buyers, and the seller is not in a hurry to sell, a farmer could get a lease with an option to buy. There are numerous ways that this could work, and the landowner could incentivize the farmer by allowing some of the lease to count toward the purchase price. This arrangement can also provide the opportunity for the farmer to get to know the land and circumstances before jumping into a purchasing situation[75].

Some landowner families plan to keep the land in the family "forever." Others plan to sell the property at some point. A lease with a farmer can include provisions for that farmer to buy the property at some point in the future. With a "right of first refusal" clause, if the landowner decides to sell the land, the farmer gets a chance to buy it at the asking price before it goes on the market. This way, the farmer knows that the land cannot be sold out from under him/her.

[75] Fields For Food: Ways to Bring Unused Farmland into Production for the Benefit of Landholders and Beginning Farmers. http://smallfarms.oregonstate.edu/sites/default/files/fields_for_food_info_sheet.pdf

SAANICH LEASING SUCCESS STORY

Robin Tunnicliffe has been farming organic vegetables for 15 years on leased land. She started off with a ¾ acre parcel, and then expanded four years later to add another ¾ acre parcel at a farm 15 kilometers away. She rented a retrofitted barn at a third location. She kept looking for a better situation but was convinced that this juggling act was her fate in order to have secure leases on the Saanich Peninsula, where real estate is priced well above her grasp.

Last year, she was approached by a longtime farmer in Metchosin, Bob Mitchell, who is 75 and has founded a corporation to oversee the running of his 10-acre farm in perpetuity. His simple reasoning, "Corporations don't die!" His children don't want to farm so he sought out Robin to run the farm for him. She will never own the land but will always have a place to farm if she can make the farm work financially. She is paid a wage and has a house on the land, and can run the farm as she likes, except for a few quirks. She has to grow corn, because Bob loves corn, and she has to grow Jack O' Lanterns for the annual kindergarten tour.

Bob draws a monthly "pension" from the farm's earnings, which enables him to keep his money invested in the farm infrastructure and land. Robin feels like it's a great deal and Bob is happy to see his land used and to have traffic and energy on the land.

Source: Young Agrarians BC: Farm Access Guide (2014)

Http://youngagrarians.org

7.2.2 LEASE PAYMENT OPTIONS

Cash Lease

The landowner and the lessee (farmer) agree to a set amount of cash that will be paid each year, typically by the acre. The farmer may prefer to pay a small portion of the annual rent at the beginning and a larger portion at the end of the season.

Crop/Livestock Share

Instead of a set amount of cash, the rent is a portion of the income from the crop. This is a way for the landowner and the farmer to share risks and benefits. A crop-share lease can be a good option for farmers who are just starting and who do not have much start-up capital.

Flexible Cash Rent

Flexible cash rent is a hybrid of the cash and share models. In this plan, the parties determine a guaranteed base rent. In addition, the landowner receives a portion of the proceeds from the farmer's sales. In a good year, both parties benefit. In a bad year, the landowner receives the base rent.

7.2.3 WHAT ABOUT LICENCES?

A licence is a contract that gives a person permission to do something on or with someone else's property. A licence, unlike a lease, is not an interest in land. Hence a licence does not "run with the land" and is not enforceable against successors/purchasers of the land.

To be considered a contractual licence, the agreement must include:

- An offer coupled with an acceptance;
- An exchange of considerations, where something of value comes from each party; (e.g., one person pays rent in exchange for permission to use someone's property);
- Subject matter that is not illegal; and
- Parties that are "competent to contract" (e.g., an adult or other legal entity like a cooperative).

A licence is not an interest in land so it cannot be registered with the BC Land Title and Survey Authority. This means that if the land is sold the licence is terminated, unless provided for otherwise in the contract of purchase and sale for the land. This is unlike a lease, which is an interest in land, and when registered, does "run with the land." A landowner can enter into multiple licence agreements for one parcel of land or one licence on part of a parcel of land. There are generally no legal restrictions to a landowner entering into one or more licence agreements in relation to farmland in the ALR. Permission of the ALC is not required.

A licence lasts for a defined period of time and terminates:

- At the end of the specified term in the licence;
- When the licencee voluntarily gives up the licence with permission of the landowner (surrender);
- When the landowner cancels the licence because the terms of the licence are not being followed;
- When the licencee or licensor becomes deceased or non-competent;
- When the licencee purchases the property from the landowner (merger);
- When the licencee ceases to make use of it for a length of time where a reasonable owner may conclude it will no longer be used (abandonment); or
- When a court orders the licence terminated (court order).

7.3 SUCCESSION PLANNING: CULTIVATING NEW FARMERS THROUGH ALTERNATIVE FARMING MODELS

Agricultural succession planning (ensuring that farms remain in farmers' hands) is an ongoing issue across BC and Canada, as the average farmer age continues to rise. AGRI has compiled a variety of documents that outline strategies and options for current farmers who wish to pass on their business to younger generations, as well as recommendations for expanding farm operations. They include: Estate Planning for

the BC Farmer, BC Farm Business Advisory Services: Taking Stock and Specialized Business Planning, and Growing Your Farm Enterprise. These documents, available on the Ministry's website, provide many suggestions on items to be completed to achieve a desired result.

There is a growing interest in the agriculture community to connect older, experienced, farmers, with new (often young) farmers trying to build equity in a farm. Young Agrarians in BC is an organization leading some initiatives in mentorships, apprenticeships, and land-linking. They are supporting farm succession planning and mentorship of new farmers through alternative tenure models. Three alternative farming models: co-operatives, incubator farms, and community farms, are discussed here.

7.3.1 CO-OPERATIVES

A co-operative is an organization owned by members who use its services or are employed there. Co-operatives can provide virtually any product or service. Agricultural co-operatives have a long and successful tradition both in BC and Canada, and have proven amazingly flexible in meeting a wide variety of needs. Since most co-ops are community and regionally based, the investment in the co-op along with the surplus revenue generated from the co-op stays within the local community.

With some commodities, producers have recognized the value of pooling their product and selling as a larger group. These associations or co-ops operate under a variety of structures with the general purpose of getting the best price for the producers. Examples include:

- United Flower Growers www.ufgca.com
- Abbotsford Growers Co-op (www.abbotsfordgrowers.com)
- B.C. Tree Fruits (www.bctree.com)

Cooperative farms may incorporate a wide variety of activities on a shared land base. Some initiatives may include:

- Food production;
- Environmental education;
- Agricultural mentorship and training;
- Conservation of natural and cultural heritage; and
- Outdoor recreation.

In co-operative farming, the farmland may be purchased or leased co-operatively by a group of farmers or a larger group of shareholders. A society or co-operative group usually governs and administers the land use agreements. Co-operative farming is one of the most viable and affordable ways for new farmers to get into farming in BC. Benefits include: sharing of costs and risks, labour, knowledge, and experience. Housing needs for all community farm members may not be able to be met on the farm due to building restrictions on ALR land, therefore co-operative farming is best suited to a small number of farmers willing to make a long term commitment to staying on the land[76].

Successful farm co-ops rely on group cohesion and relationships, which are a strong requirement of the ability to work together. Clear strategies for business management need to be designed and practices need to be regularly evaluated.

There are currently more than 20 farms in BC that have experience and knowledge in co-operative farming. They include:

- Glen Valley Organic Farm Cooperative, Abbotsford;
- Lohbrunner Farm, Langford;
- Keating Community Farm, Duncan;
- Nicomekl Community Organic Farm, Langley;
- Fraser Common Farm, Aldergrove;
- Providence Farm, Duncan;
- Saanich Organics, Saanich; and
- Yarrow Eco-Village (includes cohousing), Chilliwack.

7.3.2 INCUBATOR FARMS AND COMMUNITY FARMS

Incubator Farms

An incubator farm is a farm site dedicated to helping new farmers hone their skills. While models vary, incubator plots generally offer se¬cure tenure for 1-5 years on land. A main goal of incubator farms is to graduate farmers on to their own farms with the skills they need to succeed. An incubator farm hosts and trains farmers as they grow food, share equipment, establish their markets, and learn from their mistakes, successes, and fellow producers. Then, once their

[76] Young Agrarians Land Access Guide 2.0 http://www.refbc.com/sites/default/files/YoungAgrarians_LandAccessGuide5.0.pdf

businesses are viable, they find their own land. Farmers can be brought into a tiered program. Initially, farmers are given a small acreage of land to farm. If their businesses prove to be successful, they will be invited to farm a larger acreage for up to 2 years. A select few successful farmers then become eligible to be Mentor Farmers, with longer term leases on the land and also more responsibilities for assisting new farmers.

Incubator Farm programs support new farm enterprises by offering access to land, equipment, and infrastructure at reasonable rates, along with business planning support, technical training, mentorship, and experience with ecological and emerging farming methods. Transition off-site at the end of the incubator term is challenging for farmers and requires appropriate levels of support from the program.

Incubator sites are attractive because they often require very little investment from the farmer and start-up costs can be minimal depending on the arrangement. Some incubator sites offer land that has been well stewarded, and support farmers through providing infrastructure, such as fencing, irrigation, tools, post-harvest storage, outbuildings, tractors and coolers. There can also be mentorship, business development resources and marketing help available. All of this infrastructure, as well as a team model of community support, can be very valuable for a new grower to test out starting a farm business, and in some cases make all the difference in getting a new business established. They can be worthwhile for the networks they enable farmers to access and the potential to pursue group purchasing opportunities.

Drawbacks of incubator plots can be the volunteer time required to participate in overall site operations, and potential group dynamics. There are few incubator farms in BC – there is often a long waiting list and an application procedure, and securing an incubator farm plot can also be a competitive process.

The FarmStart program in Guelph, Ontario is the most established Canadian incubator farm program in Canada. Other examples include:

- Richmond Farm School (Richmond, BC);
- Intervale Farms Program (Burlington, VT);
- Agriculture and Land-Based Training Association (Salinas Valley, CA);
- UC Farm Incubator Project (Humboldt, CA); and
- New American Sustainable Agriculture Project (Lewsiton, ME).

Some incubator farms, such as those operated by FarmStart Ontario (Brampton, ON)[77] and Intervale (Burlington, VT)[78], require new farmers to sign land use protocols in addition to lease terms. These protocols include directives regarding crop rotation, soil conservation, compost management, disease and pest management, and other specific agricultural practices.

The Central Okanagan Community Farm Society (COCF) is exploring the concept of starting incubator farms for new farmers in the greater Kelowna area. The land would be available for 1-3 years and would assist new farmers in gaining all the skills required to transition onto their own land. At this stage, COCF is still exploring the viability of the incubator farm concept and seeking land. They are also interested in potential mentors to assist with this project[79].

Community Farms

Similar to incubator farms, community farms foster a supportive community environment that is often geared to facilitating new farmers to access land. In general, their structure differs from incubator farms in that they may provide less infrastructure and mentorship, while offering longer-term

[77] FarmStart Canada, 2014. Website accessed November 2014. http://www.farmstart.ca/programs/start-up-farms/
[78] Intervale Centre, 2014. Intervale Farms website. http://www.intervale.org/what-we-do/farms-program/
[79] Central Okanagan Community Farm Society. Contact is Kyla Gowenlock (kyla.gowenlock@gmail.com) http://youngagrarians.org/a-head-start-for-new-farmers-in-the-central-okanagan/

leases or tenure. Some community farms operate incubators whereby farmers come and start their businesses with limited leases, and then move on to new land.

Community farms are based on the premise of shared farming on shared land. They are often run as social enterprises that focus on food production in conjunction with various other activities. Community farms are generally made up of complementary businesses that contribute to a whole vision of sustainable living off the land with a housing component. The community farm model is becoming more widespread with the rising price of land and the increasing interest in sustainable food production among younger people. Some community farms in BC have been in operation in BC for over 20 years.

Establishing a new community farm requires lots of paperwork before the ground gets broken and it can be a big task that requires lots of commitment. Many ventures into community farming don't get past the planning stages because they are unable to navigate the requirements and limitations of building a site that supports a more complex live-work community.

However, the Central Okanagan Community Farm Society (COCF) has recently been established with a mission to grow fresh, healthy, tasty food to share with other non-profits in the Central Okanagan, so they can feed quality food to their clients. COCF relies heavily on volunteers who are provided with the opportunity to increase their farming skills in exchange for their labour. The COCF slogan is: Grow. Feed. Teach. The COCF is a partner with the Central Okanagan Food Policy Council, Central Okanagan Fruit Tree Project and Central Okanagan Community Gardens Society[80].

[80] Central Okanagan Community Farm Society website. grow.feed.teach@gmail.com

08 IMPLEMENTATION STRATEGY

In order for the activities outlined in the WCAP to become implemented on the ground, a strategy is required. The five implementation phases are outlined below:

1. Adoption and endorsement;
2. Exploration of long term lease arrangement(s);
3. Exploration of alternative access programs;
4. Facilitation of agricultural development; and
5. Communication of successes.

Table 17. Steps recommended to successfully implement WCAP.

Implementation Phase	Implementation Step	Lead Players	Supporting Players	Timeframe
1) Adoption and edorsement	1.1 Present the Plan to the property owners and the AAC for support.	Staff	Consultants	Spring 2016
	1.2 Present the Plan to CWK Council for endorsement and/or adoption.	Staff	Consultants	Summer 2016
	1.3 Present the Plan to property owners and other partners for information / support.	Staff		Summer 2016
2) Explore long term lease arrangement(s)	2.1 Meet with property owners, at their request, who are interested in moving ahead with the recommendations.	Staff	Property owners	Fall 2016
	2.2 Invite those with experiences in long term leases and a farmland real estate expert to discuss long term lease arrangements with property owners.	Property owners, Young Agrarians, COCf	Staff	Fall 2016
	2.3 Advertise the opportunity for long term leases and farming in Westbank Centre.	Property owners	Farm real estate, Young Agrarians	Fall and Winter 2016
	2.4 Finalize farm plans and discuss the interest in creating a Food Hub.	Farmers	Property owners/ leaseholders	Winter and Spring 2017
3) Explore alternative access programs	3.1 Determine if property owners and/or leaseholders are interested in co-operatives, incubator farms, and/or community farms.	Property owners/ leaseholders	COCF, Farm Folk/City Folk, Young Agrarians, others	2017
	3.2 Connect property owners with organizations who may be interested in establishing programs with property owners and/or leaseholders.	Property owners, leaseholders, staff	COCF, COCG, Farm Folk/City Folk, Young Agrarians, others	2017
	3.3 Reach out to existing farms to determine mentorship / apprenticeship opportunities.	Property owners, leaseholders, staff	Existing farms, Young Agrarians, others	2017 - ongoing
4) Facilitate Agricultural Development	4.1 Ensure policies and regulations remain supportive and conducive to food production and farmland protection.	Staff, Elected officials		Ongoing
	4.2 Consider allocation of annual local regional funding (including in-kind) to provide opportunities to support agriculture in West Kelowna.	Staff, Elected officials		Ongoing
5) Communicate successes	5.1 Ensure that the success of the WCAP is communicated to funding agencies, Okanagan farmers, and the community of West Kelowna.	Staff	Food Hub (if it emerges)	Ongoing
	5.2 Create a webpage or website providing information and support for agriculture in West Kelowna.	Staff	Food Hub (if it emerges)	Fall / Winter 2016
	5.3 Develop marketing and branding tools to communicate the project and the products arising from WC food production.	Property owners and leaseholders	Food Hub (if it emerges)	Winter / Spring 2017

09 CONCLUSION

In the heart of the Okanagan, West Kelowna is an incredibly fertile part of BC known for its historically active orchards and farms. However, many farms and farmers are struggling as markets change and the average age of farmers increases. Westbank Centre is an example of what can happen when investments in the land dwindle and those who find themselves in positions of agricultural land ownership are not necessarily farmers. The focus of the Westbank Centre Agricultural Plan, which includes over 100 acres of land, represents a once-fertile fruit orchard area that is now underutilized for agricultural purposes. The City of West Kelowna has decided to prepare this Plan in order to highlight several possibilities in terms of agricultural production in the area. It is intended to be used as an example of what could be done in other parts of West Kelowna that may also be suffering from agricultural underproduction.

Based on soil, water, and climate the diversity of what can be cultivated Westbank Centre is great. The gaps that exist are a combination of lack of investment in agriculture and challenges for those with skills in agriculture to be able to access affordable land. The findings of this report focus on three possible scenarios that are expected to generate good return on investment over the long term. Significant parts of the report also explore tenure arrangements and alternative land access programs.

There is an incredible opportunity for Westbank Centre to become an agricultural jewel of West Kelowna, to set itself apart from existing wineries by focusing on other crops, while also capitalizing on visitors seeking agricultural tourism experiences in the region. However, in order for this plan to be realized, investment is required and leadership amongst the current property owners will be key. In order for a cidery, cherry orchard, or mixed farm to become a reality, long term lease agreements will need to be signed with farmers or the land will need to be sold at a fair agricultural value.

One of the best ways to protect the agricultural land base and promote agricultural investment is to use farmland for farming. An increase in agricultural production in Westbank Centre will support the fact that agriculture is a significant contributor to the local economy and that using farmland for agricultural production is an important tool in strengthening local food security.

10 APPENDICES

SECENARIO 1 - APPLE CIDERY

Cider from bittersharp & bittersweet apples

Commercial apple press (Merridale Estate Cidery, BC)

Tasting room (Albemarle Ciderworks, Virginia)

Tap room & patio (Far From The Tree Hard Cider, Massachusetts)

CIDERY OPERATIONS

COMMUNITY GARDEN

Apples

Cherries

Peaches

Apricots

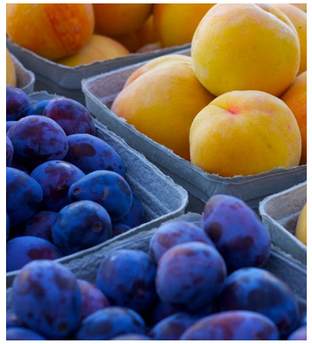
Plums

Eggs

Honey

AGRICULTURAL PRODUCTS

CHARACTER IMAGES + PRECEDENTS

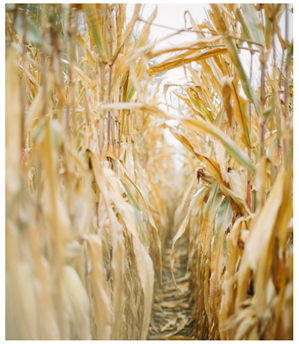


Direct fruit sales

Market garden sales

Value-added product sales

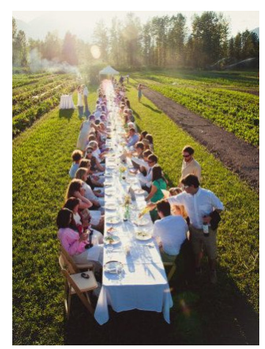
Seasonal celebration - blossom tour



Seasonal celebration - corn maze

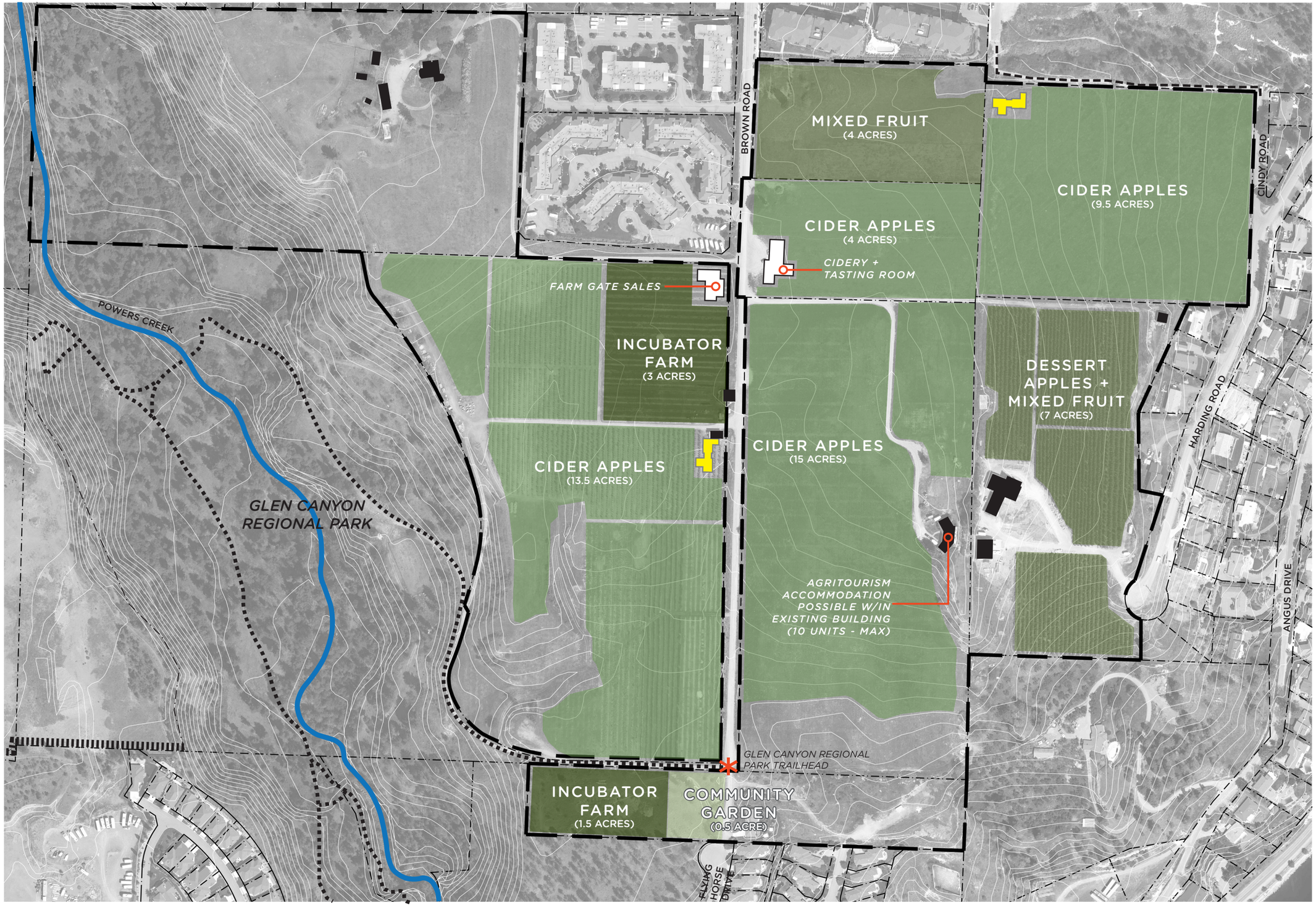
FARM GATE

ACCOMMODATION



EVENTS

SECENARIO 1 - APPLE CIDERY



SCHEMATIC PLAN

SECTION 2 - CHERRY PRODUCTION SCENARIO 2 - CHERRY PRODUCTION

CHARACTER IMAGES + PRECEDENTS

Cherries

Wind machine

Mechanical cherry sorting

Direct sales & U-pick

Peaches

Apples

Plums

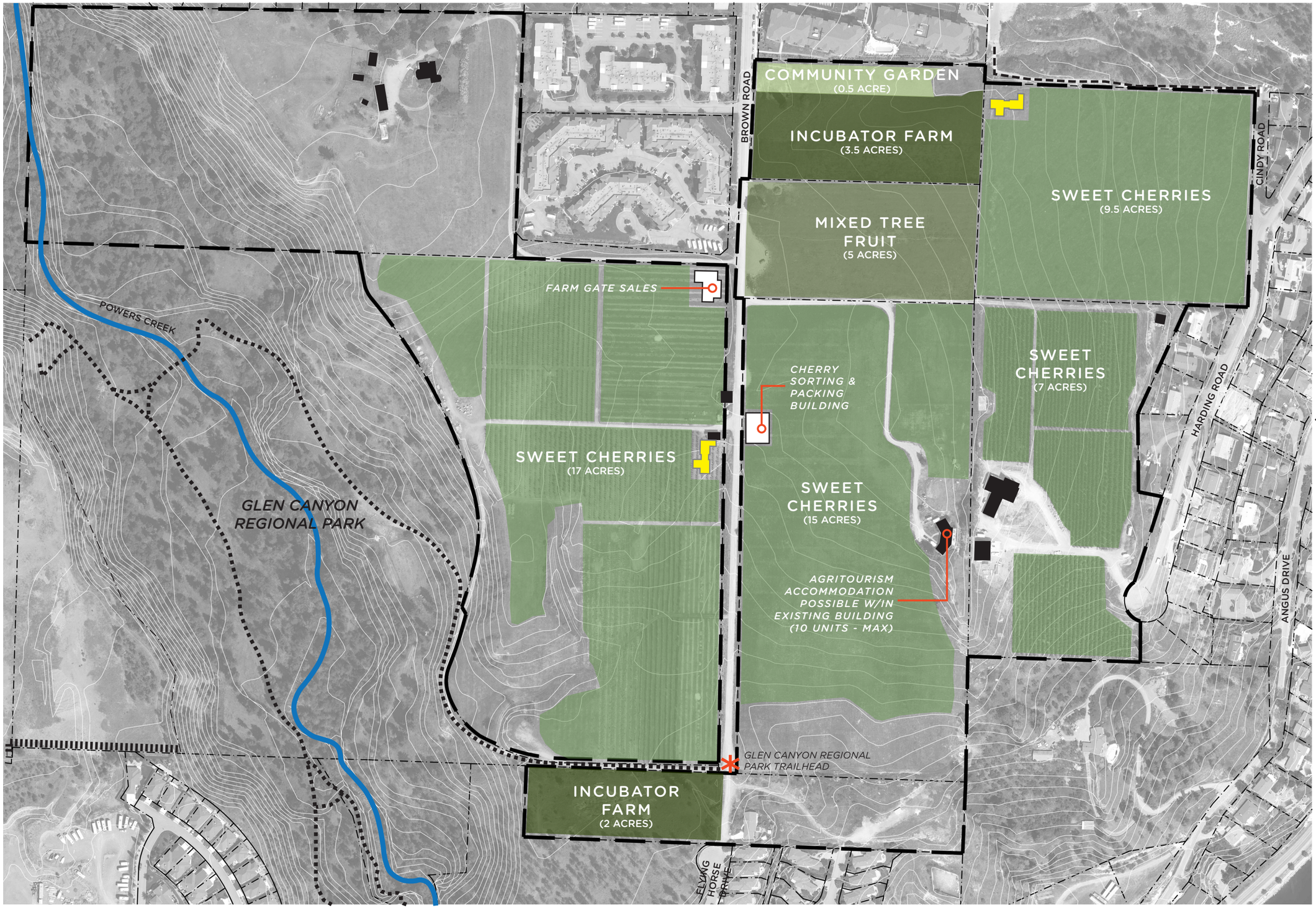
Nectarines

VALUE-ADDDED PRODUCTS

False Creek Community Garden, Vancouver

SCENARIO 2 - CHERRY PRODUCTION

SCHEMATIC PLAN



- WCAP Study Area Limit
- Property Line
- Trail (Future, Private Land)
- Trails (CIty of West Kelowna)
- Trails (RDCO)
- Existing Building
- Proposed Building
- Possible Agritourism Accommodation (10 units max.)
- Incubator farm (5.5 ac. total)
- Mixed tree fruit (5 ac. total)
- Sweet cherries (48.5 ac. total)
- Community garden (0.5 ac. total)

SCENARIO 3 - MIXED PRODUCTION

Blueberries

Sunflowers

Polytunnel seedling starters

Greenhouse herbs & microgreens

Polytunnels - extended growing season

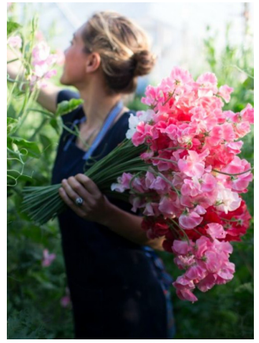
Honey

Eggs

Market flower garden

AGRICULTURAL PRODUCTS

CHARACTER IMAGES + PRECEDENTS



Flower U-pick or CSA

Berry U-pick

Community gathering space

Guest chef dinners

Incubator farm (UBC Farm)

CSA program

COMMUNITY ENGAGEMENT + VALUE-ADDED

Inn-style accommodation (Blackberry Farm, Tennessee)

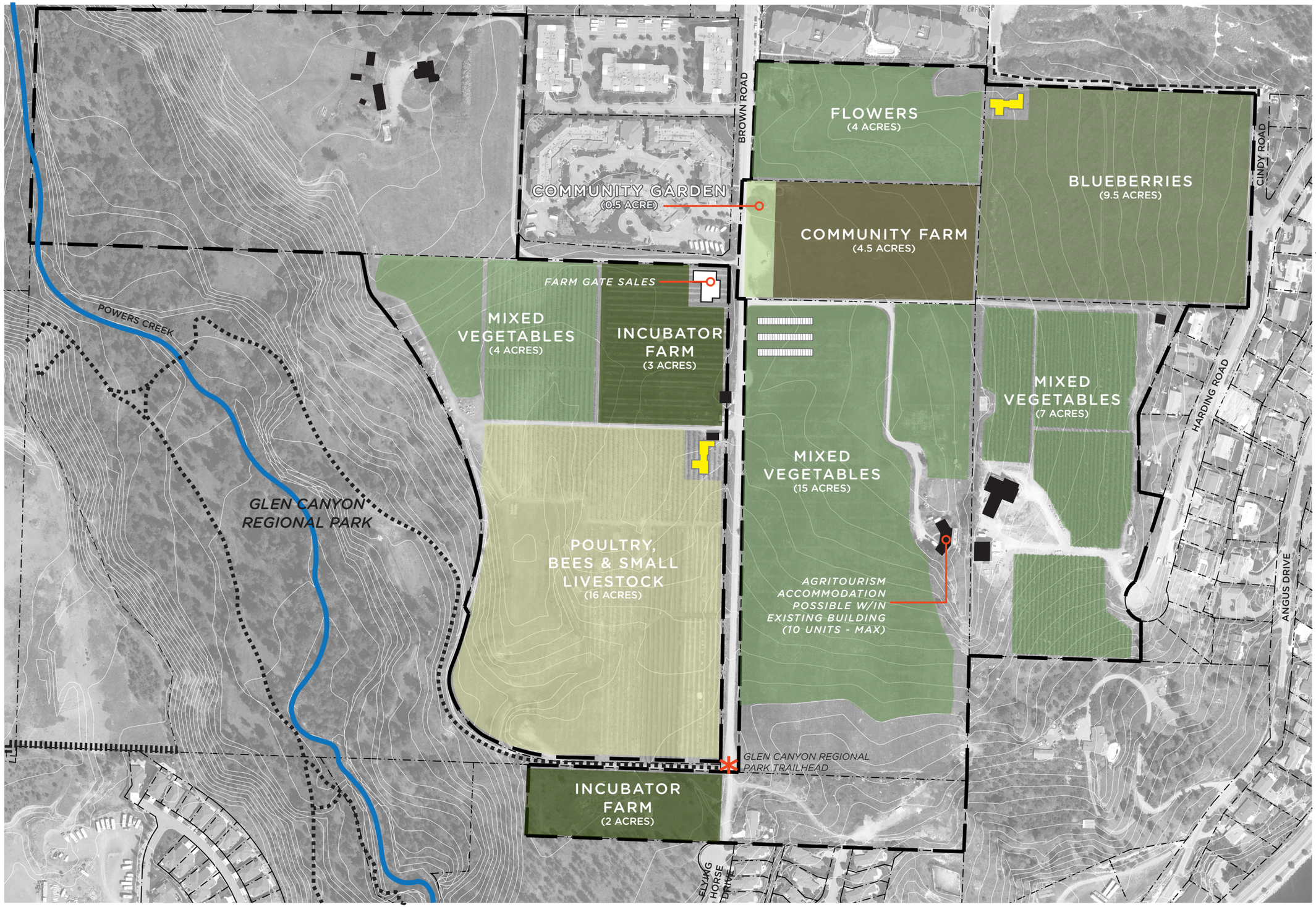
ACCOMMONDATIONS

Squamish CAN Grow Community Garden

COMMUNITY GARDEN

SECENARIO 3 - MIXED PRODUCTION

SCHEMATIC PLAN



- WCAP Study Area Limit
- Property Line
- Trail (Future, Private Land)
- Trails (CIty of West Kelowna)
- Trails (RDCO)
- Existing Building
- Proposed Building
- Possible Agritourism Accommodation (10 units max.)
- Community farm (4.5 ac.)
- Incubator farm (5 ac. total)
- Blueberries (9.5 ac.)
- Mixed vegetables & flowers (30 ac. total)
- Community garden (0.5 ac. total)
- Poultry, bees & small livestock (16 ac.)
- Mixed herbs 3 x 3000 sq. ft. polyhouses

APPENDIX 2: SURVEY RESULTS

City of West Kelowna staff prepared a survey to receive feedback from the public about the proposed Westbank Centre Agriculture Plan. It was online from June 22 to July 4, 2016, and it was promoted at the Food Truck Rally in Westbank on Saturday, June 23, and at Westside Daze from Thursday, June 30 through Sunday, July 3. Hard copies were available at both events. The survey was added as a calendar item to the City of West Kelowna home page, and was also posted on the Westbank Centre Agriculture Plan webpage. Results are summarized below.

Main survey findings based on 34 participants:

- 88.2% say they visit local farms to purchase their products
- 38% say they make these visits a few times a month
- 20% say they would like to see more farm stands/farm gate sales, 19% more U-pick fields/orchards, and 18% more farm-to-table restaurants
- Many showed preference for the cidery scenario.

Most of the comments received highlight the importance of agriculture to the community and the need for maintaining ALR lands. There was also concern about how the plan will be implemented due to the land being privately-held. Comments included (these have been condensed for clarity and conciseness):

- The climate is great for agriculture.
- No need for more housing developments.
- Enjoy seeing local chefs using local produce.
- Every effort should be taken to preserve agricultural lands and help farmers make a good living.
- ALR and agriculture is the heart of West Kelowna/Westbank - best grapes and wine in the world.
- West Kelowna needs to focus on making this area more inviting for agritourism.
- Would like to see poultry, cattle and egg productions and equestrian plant/tree production nurseries included in the strategy.
- Need to enforce bylaws regarding housing/accommodation units on farmland.
- Would be great to see a Farm Trail promoted in addition to the Wine Trail.
- Must create an environment where farms can operate successfully – need to make sure non-farm residents are aware of what it means to live in a farming area.
- It is extremely important to keep our green space and agricultural lands.
- Would like to see large retail stores support local farmers.
- Difficult to implement this plan due to high cost of land for farming. Land will be used for farming only if it can make a profit.

APPENDIX 3: SURVEY QUESTIONS

WESTBANK CENTRE AGRICULTURAL PLAN FEEDBACK FORM

The City is undergoing a planning process to implement an agricultural plan for vacant Agricultural Land Reserve (ALR) lands located within Westbank Centre. The aim of the plan is to further promote the agricultural industry within West Kelowna and determine opportunities for growth.

Your input is important to us! Please complete this feedback form and return to City Hall, 2760 Cameron Rd, West Kelowna, or complete the survey online by Thursday, June 30th, 2016.

1. Do you visit local farms to purchase their products?
   - ☐ Yes (see questions 2 & 3)
   - ☐ No, but I would if it was more convenient to do so
   - ☐ No

2. If you answered 'yes', which farm products do you purchase? Please select all that apply (if you did not answer 'yes' to question 1, please continue to question 4).
   - ☐ Produce (fruits, vegetables)
   - ☐ Wine, beer, cider
   - ☐ Juices
   - ☐ Honey, jams
   - ☐ Baked goods (pies, tarts, etc.)

3. If you answered 'yes' to question 1, how often do you visit local farms?
   - ☐ More than once a week
   - ☐ Weekly
   - ☐ A few times a month
   - ☐ A few times a season

4. How would you rate the importance of agriculture to the West Kelowna community? Please circle a rating on the scale below.

1	2	3	4	5	6	7	8	9	10
Not Very Important				Moderately Important					Very Important

5. Do you visit regional farmer's markets?
   - ☐ Yes
   - ☐ Sometimes
   - ☐ No

6. If 'yes' or 'sometimes', which farmer's markets do you visit? Please select all that apply.
   - ☐ West Kelowna
   - ☐ Kelowna
   - ☐ Peachland

- ☐ Summerland
- ☐ Penticton
- ☐ Other (please specify): _____

7. What types of agricultural activities or uses would you like to see in West Kelowna? Are there any existing agricultural experiences that you would like to see more of? Please select up to 5 items that interest you most.

   - ☐ Cideries/breweries
   - ☐ U-pick fields/orchards (i.e. blueberries, strawberries, peaches, apples)
   - ☐ Wineries
   - ☐ Petting zoos
   - ☐ Farm stands/farm gate sales
   - ☐ Farm-to-table restaurants
   - ☐ Food box programs/fresh food delivery
   - ☐ Value-added sales (i.e. honey, jams, baked goods)
   - ☐ Agri-tourism accommodations

8. Please provide any additional comments you have on the local agricultural industry and how you think it can be improved through implementation of the plan.

   _____
   _____
   _____
   _____
   _____

Thank you for your feedback!