# Lillooet

## Community Profile & Investment Guide

LILLOOET
GUARANTEED RUGGED

**www.lillooetbc.ca**

***Additional information may be obtained from the District of Lillooet's website***

# Squamish Lillooet Regional District

## MAYOR'S WELCOME – WELCOME TO LILLOOET

Dear Members of the Business Community,

On behalf of the Council and the District of Lillooet, I thank you for your interest in Lillooet.

Lillooet is full of opportunity. It's a great location for your business and for you to enjoy life in a welcoming community. With affordable property and our openness to new ideas, we welcome your creativity and look forward to assisting you in business making Lillooet your home.

Residents are proud to have the amenities provided by the health care professionals that offer an exceptional quality of life and the services provided by the fully-staffed hospital. Our REC Centre, which features a pool, library, weight room, and ice rink, also shows our commitment to our support of health and life the way it was meant to be.

Council encourages residential, commercial, and industrial development and will make every effort to make your dream a reality. Lillooet is the new hot spot for the wine industry and we want to work with new investors helping it grow and prosper. We know this is just the beginning for many new agricultural ventures and new emerging businesses in this sector.

Lillooet's magnificent geography and close proximity to Whistler makes us a natural fit for a thriving eco-tourism industry. You simply cannot beat the majesty of our mountains, our relationship with the mighty Fraser River, or our sun drenched canyon landscape making all the outdoor activities that go with raw beauty there for your taking. Lillooet is Guaranteed Rugged!

We pride ourselves in being very culturally diverse, attracting many different ethnicities from all over the globe and working with the St'át'imc people to support their rich cultural heritage. We work closely and collaboratively with everyone possible to make Lillooet the success it is. Visit our community and see for yourself why those who come for a visit often stay and make Lillooet their home. We did.

Contact us for more information.

Dennis Bontron,

Mayor

District of Lillooet

# EXECUTIVE SUMMARY

The purpose of the "Lillooet Community Profile & Investment Guide" is simple. We want you to think clearly about investment in Lillooet. We look at the potential investor in two ways. First we look at the investor as an investor and try to provide all the information that is expected in investment guides produced for other communities in Northern BC. This information is intended to serve a wide audience. It needs to be broad enough to inform people not familiar with Canadian rules or basic aspects about things such as taxation in Canada. And it must be specific enough to speak to the investor well aware of how to do business in Canada or BC. Second, we look at the investor as a potential community member. To that end, significant information is provided that pertains to the quality of life that we enjoy in Lillooet. For example, we provide an in-depth look at the public education system in Lillooet. What is available for the children of the investor or the children of his employees? We feel information about the community of Lillooet is essential when it comes to deciding whether to invest in Lillooet.

So the information in this Community Profile can be divided into two main categories. First, there is information about the kind of lifestyle Lillooet provides. In this vein we look at higher educational opportunities in Lillooet, the Lillooet public education system, community services such as the library and the Lillooet REC centre, and the healthcare system in Lillooet. Lillooet is very rich in terms of the facilities we have and the types of activities they can support. In fact we have facilities that many larger communities do not. Hopefully considering these aspects of the community will be useful in thinking about relocating to Lillooet. The aim is to give a picture of the quality of life that Lillooet is committed to.

The other category of information is not about the lifestyle in Lillooet. Rather, it is meant to give the investor an idea of the specific investment opportunities in Lillooet and to provide data that is relevant to deciding whether Lillooet can support a particular type of investment. So for example with respect to investment into tourism, we talk about the opportunities specific to Lillooet and give a general sense of the current state of that industry in Lillooet. Or we describe the broadband internet services available in Lillooet.

Some of the key findings of the "Lillooet Community Profile & Investment Guide" are summarized below:

## INVESTMENT

The areas of investment we focus on in the Community Profile are:

*Tourism*:

- Significant opportunities are identified in First Nations' cultural tourism. An example of cultural tourism is cultural heritage interpretation (i.e. touring to historical sites and learning about the ancient culture). This is known as a "soft educational experience" and is very popular with European tourists. To date First Nations' cultural tourism is virtually untapped and has huge potential as an economic driver for Lillooet and surrounding First Nations' communities.

- Lillooet can become an eco-tourism hot spot. Lillooet's natural capital — its lakes, streams, rivers, mountains and climate — are capable of supporting a wide variety of outdoor activities year-round. The rugged terrain supports activities such as camping, hiking, boating, canoeing, kayaking, mountain biking, and horseback riding to name a few. A wide range of winter activities is also possible in Lillooet. Visitors also come to see a diverse range of wildlife.
- Opportunities are identified in agri-tourism. Commercial agriculture and agri-tourism can coincide and be successful. Tours of organic farms, ranches and fruit orchards are all possible. The most successful model of agri-tourism is winery/brewery tours. A recent example of success in Lillooet agri-tourism is Fort Berens Estate Winery. Fort Berens offers wine tasting, tours of the vineyard, and is expanding into other agri-tourism ventures. This model of marketing is quite successful. Also tourism based around wineries or breweries can serve as a vehicle to market a wide range of high-quality, and lucrative products such as artisanal cheeses or organic meats.

*Agriculture*
- Lillooet has great potential in agriculture. The "Agriculture in Lillooet" section in the Community Profile is meant to expose that potential.
- Two comprehensive databases are available. The first profiles the main commercial and niche crops that will grow in hardiness zones five and six. The second database profiles crops that grow in zones three and four. Collectively they profile all of the main crops that will grow in Lillooet and area. For each crop information is provided about the potential uses of that specific crop, the current state of the North American market for that crop (where applicable), and the requirements for growing that crop.
- There is significant potential for organic products produced in a sustainable manner. Potential is also identified in the area of long term storage crops that require little processing. Direct to consumer marketing is recommended however larger-scale wholesale operations may warrant consideration. Many crops are regulated. This means that only licensed growers can sell in the province. This may present barriers to large scale markets. There is also potential for a fruit wine operation in Lillooet.
- As indicated earlier, vineyards and hop farms/microbrewery operations can provide access to a captive audience who are willing to pay a premium for high-quality goods.
- Agroforestry is identified as a viable approach to agriculture in Lillooet and surrounding area. Agroforestry is a land management approach that deliberately combines the production of trees with other crops/livestock. Agroforestry can support a wide variety of specialty or niche crops most of which have more than one use. So agroforestry allows for a diverse range of consumer products.
- The agriculture section provides a great deal of information about Lillooet's climate that is relevant for those interested in growing grapes and other crops.
- Opportunities are identified in hemp production. Hemp has a number of qualities that recommend it. It is easy to grow and produces a wide range of consumer products from high-quality edible oils used in salad dressings to fiber products such as clothing and paper. There are many emerging markets for hemp products.

The Community Profile also provides information that any person running a business or looking to start a business will need to know.
We look at things such as:
- Payroll costs and taxation in Canada, BC, and Lillooet.
- We provide statistics that serve to describe the people of Lillooet and characteristics such as their language knowledge, their level of education, their average household income, and employment rate (amongst others).
- We describe Lillooet utilities such as the local water system and waste water system, BC Hydro billing structures, and telecommunications services that are available in Lillooet.
- We describe the several levels of government from federal to local and provide contact information for each.
- Regarding real estate, we provide a general picture of the current market and options available in terms of land in Lillooet and area. We look at the difference in cost of owning in Lillooet versus the rest of BC. Operating a satellite office in Lillooet can be justified in terms of the relative savings on property and domiciles.
- We describe community services such as the local library, the government agent, the employment counselling office, and medical services available in Lillooet such as the dentist, the clinic, the hospital, and the wellness centre (and more).
- We provide detailed information about the public education system in Lillooet. There are many learning options in Lillooet. There is opportunity to receive dual credit for some courses. This means that you can take one course and receive credits toward your high school diploma as well as university credit. There are also opportunities for trades training.
- We provide a description of the road and rail network in BC. We look at how this integrates with the three main ports on the west coast of Canada and, in turn, how those ports are integrated by rail within the northern corridor of North America.

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# 1. CITY HALL

## ADMINSTRATION

| | |
|---|---|
| Grant Loyer<br>250.256.7422 Ext. (245) | Chief Administrative Officer<br>gloyer@lillooetbc.ca |
| Steve Hohner<br>250.256.7422 Ext. (231) | Directory of Public Works<br>shohner@lillooetbc.ca |
| Jerry Sucharyna<br>250.256.7422 Ext. (232) | Economic Development Officer<br>jsucharyna@lillooetbc.ca |
| Tom Willey<br>250.256.7422 Ext. (234) | Building Official<br>twilley@lillooetbc.ca |
| Erick Davidson<br>250.256.7422 Ext. (229) | Bylaw Compliance Officer<br>edavidson@lillooetbc.ca |
| Wayne Robinson<br>250.256.7422 Ext. (249) | Director of Recreation<br>rec@lillooetbc.ca |
| Leslie Piderman<br>250.256.7422 Ext. (222) | Director of Finance<br>lpiderman@lillooetbc.ca |
| Ben Parnell<br>250.256.7422 Ext. (228) | Deputy Corporate Office<br>bparnell@lillooetbc.ca |
| Nate Moyer<br>250.256.7422 Ext. (227) | Accounting Clerk<br>nmoyer@lillooetbc.ca |
| Marguerite Parker<br>250.256.7422 Ext. (221) | Accounting Clerk / Receptionist<br>mparker@lillooetbc.ca |

District of Lillooet
Lillooet Municipal Hall
615 Main Street
PO Box 610, Lillooet, BC
V0K 1V0
Phone: 250.256.4289
Fax: 250.256.4288
www.lillooetbc.ca
cityhall@lillooetbc.ca
lillooetbc.ca

**OFFICE HOURS**
District of Lillooet Municipal Hall office hours are:

Monday to Friday
8:30 am to 12:00 noon; and 1:00 pm to 4:30 pm

Closed Statutory Holidays

## MISSION, VISION AND VALUES

OUR MISSION
"Lillooet will provide excellent public services to enhance our quality of life and address our community needs."

OUR VISION
"We believe that diversity is our path to growth and our goal is to deliver excellence every day. Lillooet strives to be a complete community."

OUR VALUES

*Customer Focused*
Our customers include our residents and visitors. We supply service in a responsive and courteous manner.

*Honest, Ethical and Fair*
Credibility comes from treating staff, citizens and partners honestly, fairly and equitably. Be attentive to all. Understand our community.

*Responsive and Accountable*
Follow up on complaints. Return calls. Answer letters. Be part of the solution. We are accountable to our community.

*Committed to Developing Leadership in Local Government*
Foster and promote leadership. We understand that a title is not the measure of leadership. Great ideas come from both inside and outside our organization and community.

*Innovative*
Embrace new thinking and ideas. Allow for the possibility that an idea may be ahead of its time and that the person offering the idea is a visionary.

*Action-Oriented*
We build teamwork because the whole is greater than the sum of the parts. Actions speak louder than words.

# 2. DEMOGRAPHICS

## POPULATION

| Population by Age Group | Lillooet Population (2006) | B.C. Population (2006) | Lillooet % Distribution (2006) | B.C. % Distribution (2006) |
|---|---|---|---|---|
| 0-4 | 135 | 201,885 | 5.80% | 4.90% |
| 5-19 | 445 | 751,280 | 19.10% | 18.30% |
| 20-44 | 635 | 1,391,245 | 27.30% | 33.30% |
| 45-64 | 750 | 1,169,270 | 32.30% | 28.50% |
| 65-74 | 205 | 313,395 | 8.80% | 7.60% |
| 75+ | 160 | 286,410 | 6.90% | 7.00% |
| Total | 2325 | 4,113,485 | 100% | 99.30% |

*Data Source: Stats Canada 2006 Census*

## HOUSEHOLD INCOME

| | Lillooet | B.C. |
|---|---|---|
| # of Private Households | 985 | 1,643,150 |
| All households, pre-tax median | $51,000 | $53,000 |
| All households, pre-tax average | $57,000 | $68,000 |

*Data Source: Stats Canada 2006 Census*

## SQUAMISH-LILLOOET AREA B POPULATION PROFILE

| | | |
|---|---|---|
| Population (2011 Census): | 359 (excluding Indian Reserves) | 1835 (including Indian Reserves) |
| Population (2006 Census): | 575 (excluding Indian Reserves) | 1719 (including Indian Reserves) |

## PROFILE OF MAIN AREA B FIRST NATIONS COMMUNITIES

| Main Indian Reserves | 2011 Population | 2006 Population | Percent Growth 2006-2011 | 2011 Occupied Dwelling | 2011 Area |
|---|---|---|---|---|---|
| Bridge River 1 | 236 | 208 | 13.5 | 84 | 38.83 $km^2$ |
| Cayoosh Creek 1 | 54 | 52 | 3.8 | 24 | 1.57 $km^2$ |
| Cheakamus 11 | 56 | 82 | -31.7 | 19 | 18.84 $km^2$ |
| Fountain 1 | 130 | 165 | -21.2 | 46 | 1.38 $km^2$ |
| Fountain 1B | 51 | 0 | | 15 | 0.87 $km^2$ |
| Lillooet 1 | 222 | 195 | 13.8 | 87 | 3.69 $km^2$ |
| McCartney's Flat 4 | 32 | 49 | -34.7 | 13 | 1.81 $km^2$ |

# 3. LABOUR FORCE

## WORKFORCE EDUCATION LEVEL

| Education Level | Number Attained | % Distribution |
|---|---|---|
| Less than High School Diploma | 270 | 21.70% |
| High School Diploma Only | 415 | 33.30% |
| Apprenticeship/Trades Certificate/Diploma | 130 | 10.40% |
| College/University Certificate/Diploma | 310 | 24.90% |
| University Bachelors Degree | 95 | 7.60% |
| University Medical/Dentistry/Optometry Degree | 0 | 0.00% |
| University Graduate Degree/Certificate | 25 | 2.00% |

## LANGUAGE KNOWLEDGE

| Language | Number Able to Hold Conversation |
|---|---|
| English | 1,875 |
| French | 85 |
| Dutch | 45 |
| German | 20 |
| Japanese | 15 |
| Ukrainian | 10 |
| Italian | 10 |

## LABOUR FORCE BY SECTOR

| | | |
|---|---|---|
| Forestry & Logging | 70 | 5.90% |
| Mining and Oil & Gas | 10 | 0.80% |
| Construction | 105 | 8.80% |
| Manufacturing | 90 | 7.50% |
| Transportation, Warehousing & Public Utilities | 95 | 7.90% |
| Wholesale Trade | 40 | 3.30% |
| Retail Trade | 135 | 11.30% |
| Services | 505 | 42.30% |
| Finance, Insurance, Real Estate & Leasing | 40 | 3.30% |
| Government | 70 | 5.90% |
| Total | 1,195 | 100.00% |

## LABOUR FORCE

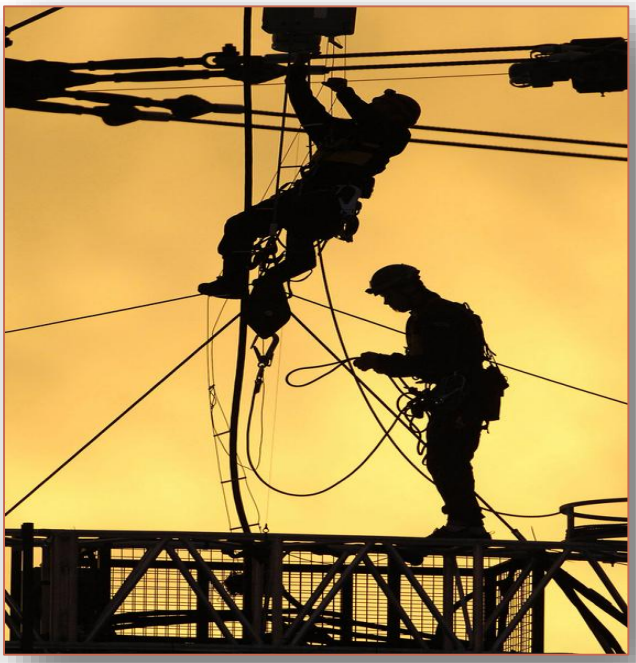
| | |
|---|---|
| Pop 15+ in labour force | 1255 |
| Employed | 1135 |
| Unemployed | 120 |
| Not in labour force | 625 |

## EMPLOYMENT RATE

| | |
|---|---|
| Unemployment Rate | 9.20% |
| Labour Participation | 67.00% |

## LABOUR PARTICIPATION

| | |
|---|---|
| Male | 70.20% |
| Female | 63.60% |



## AVERAGE INCOME BY OCCUPATION-THOMPSON OKANAGAN

| Occupation | Average Wage ($/Hour)($CDN) | Effective Date |
|---|---|---|
| Accounting and Related Clerks | $17.60 | 2011 |
| Administrative Officers | $22.55 | 2011 |
| Audio and Video Recording Technicians | $25.07 | 2011 |
| Bookkeepers | $18.34 | 2011 |
| Business Development Officers and Marketing Researchers and Consultants | $26.74 | 2011 |
| Carpenters | $23.27 | 2011 |
| Construction Trades Helpers and Labourers | $17.59 | 2011 |
| Electronic Service Technicians (Household and Business Equipment) | $21.06 | 2011 |
| Film and Video Camera Operators | $23.54 | 2011 |
| Financial Auditors and Accountants | $26.65 | 2011 |
| Gas Fitters | $21.16 | 2011 |
| Heavy Equipment Operators (Except Crane) | $25.01 | 2011 |
| Material Handlers | $16.74 | 2011 |
| Mining Engineers | $34.72 | 2011 |
| Primary Production Managers (Except Agriculture) | $32.65 | 2011 |
| Producers, Directors, Choreographers, and Related Occupations | $25.91 | 2011 |
| Purchasing Agents and Officers | $24.85 | 2011 |
| Railway and Yard Locomotive Engineers | $32.51 | 2011 |
| Shippers and Receivers | $15.63 | 2011 |

| Occupation | Average Wage ($/Hour)($CDN) | Effective Date |
|---|---|---|
| Supervisors, Recording, Distributing, and Scheduling Occupations | $20.29 | 2011 |
| Support Occupations in Motion Pictures, Broadcasting and the Performing Arts | $19.13 | 2011 |
| Tailors, Dressmakers, Furriers, and Milliners | $13.49 | 2011 |
| Telecommunications Installation and Repair Workers | $24.54 | 2011 |
| Telecommunications Line and Cable Workers | $24.10 | 2011 |
| Theatre, Fashion, Exhibit, and Other Creative Designer | $21.87 | 2011 |
| Truck Drivers | $22.60 | 2011 |
| Welders and Related Machine Operators | $23.66 | 2011 |
| Accounting and Related Clerks | $18.60 | 2011 |
| Audio and Video Recording | $25.07 | 2011 |

**complete list of Wages and Salaries: [http://www.workingincanada.gc.ca/home-eng.do?lang=eng](http://www.workingincanada.gc.ca/home-eng.do?lang=eng)*

# 4. PAYROLL COSTS

## WORKERS COMPENSATION - 2012

| | | Notes |
|---|---|---|
| Average Base Premium Rate Per $100 of Payroll | $1.54 CDN | Rates set by employer's business activity. Applies up to maximum gross earnings of $73,700 (CDN) per year |
| Rate for Vineyard Per $100 of Payroll | $1.50 CDN | |
| Rate for Orchard Per $100 of Payroll | $1.50 CDN | |
| Rate for Cable or High-Lead Logging Per $100 of Payroll | $9.10 CDN | |
| Rate for Helicopter Logging Per $100 of Payroll | $9.36 CDN | |
| Rate for Outdoor Sport Tour | $2.95 CDN | |
| Maximum Weekly Benefit (Net) | $955.74 CDN | Maximum per employee set at 90% of average net earnings (after deductions for income taxes, CPP & Employment Insurance), up to maximum wage of $73,700 |

*Data Source: worksafebc.com

## EMPLOYMENT INSURANCE - 2012

| | | Notes |
|---|---|---|
| Taxable base | | Based on gross payroll up to a gross per worker salary of 45,900 per year (CDN) |
| Percentage Rate (Employer Premium): | | |
| ▪ Employee Rate | 1.73% | Maximum annual contribution per worker $839.97 (CDN) |
| ▪ Employer Rate | 2.56% | Maximum annual contribution per worker $1175.96 (CDN) |
| ▪ Maximum Weekly Benefits | $485.00 CDN | |
| (based on 55% of weekly earnings in past 26 weeks) | | |

# SOCIAL INSURANCE (CANADA PENSION PLAN) - 2012

| | | Notes |
|---|---|---|
| Taxable base | Gross Payroll $3,500 CDN | Based on annual gross salary up to $51,000, basic exemption of $3,500. Both employers and employees are required to contribute to the Canada Pension Plan |
| Employee / Employer Contribution | 4.95% | Employer premium equal to employee premium |
| Maximum Annual Employer Contribution Per Employee | $2306.7 CDN | Employer contribution matches employee contribution |
| Rate | 4.95% | |
| Maximum Annual Self Employed Contribution | $4,613.401 CDN | |

# 5. TAXATION

## PROPERTY ASSESSMENT

| For Lillooet in 2011 the total assessed values provided by BC Assessment are | |
|---|---|
| Residential Property | $187,622,900 |
| Utilities Property | $8,342,665.00 |
| Major Industrial Property | $915,500.00 |
| Light Industrial Property | $2,044,600.00 |
| Business Property | $27,568,850.00 |
| Rec/Non Profit Property | $265,400.00 |
| Farm Property | $563,879.00 |

## 2011 TAX LEVY

| 2011 Tax Levy | |
|---|---|
| School | $1,386,360.00 |
| General Municipal | $1,611,457.00 |
| Regional District (SLRD) | $225,724.00 |
| Regional Hospital | $71,707.00 |

| Commercial / Industrial Tax Rates | |
|---|---|
| For the 2011 tax year, commercial/industrial tax rates are: | |
| Commercial | $24.6867/$1,000 of taxable assessed value |
| Major Industrial | $37.1100/$1,000 of taxable assessed value |
| Light Industrial | $25.9751/$1,000 of taxable assessed value |

## COMMERCIAL & INDUSTRIAL TAX RATES

## PROVINCIAL TAXES

| Type | Federal | Provincial (State) | Local |
|---|---|---|---|
| Earned Income | 15.00% - 29.00% | 5.06% - 14.70% | N/A |
| Unearned Income (e.g. Dividend) | 0.00% - 14.55% | 0.00% - 3.92% | N/A |
| Capital Gains | 7.50% - 14.50% | 2.53% - 7.35% | N/A |

** Data Source: Invest BC Research, 2012.*

# TAX RATES 2011 (PER $1,000 OF TAXABLE ASSESSED VALUE)

| Property Class | Residential | Utilities | Major Industry | Light Industry | Business | Recreation (Non Profit) | Farm |
|---|---|---|---|---|---|---|---|
| General Municipal | 4.4322 | 30.582 | 23.9335 | 13.7396 | 13.7396 | 4.4322 | 4.4322 |
| Municipal Debt | 0.2692 | 1.8577 | 1.4538 | 0.8346 | 0.8346 | 0.2692 | 0.2692 |
| Total Municipal | 4.7014 | 32.4397 | 25.3873 | 14.5742 | 14.5742 | 4.7014 | 4.7014 |
| Regional District (SLRD) Land and Improvements | 0.7791 | 2.727 | 2.649 | 2.649 | 1.9089 | 0.7791 | 0.7791 |
| TNRD/SLRD Hospital District | 0.242 | 0.8469 | 0.8227 | 0.8227 | 0.5928 | 0.242 | 0.242 |
| School District | 3.3037 | 14.1 | 6.6 | 6.6 | 6.6 | 3.4 | 6.8 |
| Police Tax, BC Assessment Authority, and Municipal Finance Authority | 0.3973 | 1.6845 | 1.651 | 1.3292 | 1.0108 | 0.3973 | 0.3973 |
| Total Other | 4.7221 | 19.3584 | 11.7227 | 11.4009 | 10.1125 | 4.8184 | 8.2184 |
| GRAND TOTAL | 9.4235 | 51.7981 | 37.11 | 25.9751 | 24.6867 | 9.5198 | 12.9198 |

| | Small Business | Manufacturing | Non-Manufacturing |
|---|---|---|---|
| Federal: | | | |
| -Rate | 11% | 16.5% | 16.5% |
| -Formula (Sales, Property, & Payroll) | n/a | n/a | n/a |
| -Accelerated Depreciated Permitted | Yes | Yes | Yes |
| Provincial: | | | |
| -Rate | 2.5% | 10.0% | 10.0% |
| -Formula (Sales, Property, & Payroll) | Sales and Payroll | Sales and Payroll | Sales and Payroll |
| -Accelerated Depreciated Permitted | No | No | No |
| Local: | | | |
| British Columbia has no local taxes | | | |
| Total Federal and Provincial Corporate Income Tax | 13.5% | 26.5% | 26.5% |

## CORPORATE INCOME TAX

## PERSONAL INCOME TAX

| | Federal | State / Provincial | Local |
|---|---|---|---|
| Earned Income | 15 – 29% | 5.06 – 14.7% | 0% |
| Unearned Income (e.g. Dividends) | 0 – 14.55% | 0 -3.92% | 0% |
| Capital Gains | 7.5 – 14.5% | 2.08 – 7.35% | 0% |

## SALES / USE TAX

| | Rate | Notes |
|---|---|---|
| Harmonized Sales Tax | 12% | HST on business inputs is fully recoverable |
| Total (Effective Combined Rate) | 7% | Net of GST 0% for production machinery and equipment for eligible manufacturers |

| | Yes/No | Rate | Notes |
|---|---|---|---|
| Electric Power | Yes | 12% | HST is fully recoverable |
| Natural Gas | Yes | 12% | HST is fully recoverable |
| Fuel Oil | Yes | 12% | HST is fully recoverable |
| Water | No | 0% | - |
| Sewer | No | 0% | - |
| Hazardous Waste Disposal | Yes | 12% | HST is fully recoverable |

# SALES TAX BY UTILITY

# 6. INTERNATIONAL RESOURCES

## INVESTMENT AND BUSINESS SUPPORT SERVICES

| Lillooet and District Chamber of Commerce | |
|---|---|
| Contact Name | Scott Hutchinson |
| Address | PO Box 650, Lillooet BC, V0K 1V0 |
| Phone | 250.256.3578 |
| Email | info@lillooetchamberofcommerce.com |
| Website | lillooetchamberofcommerce.com/index.php?id=47 |

| Northern Development Initiative Trust | |
|---|---|
| Contact Name | Dean Mckinley, Director, Economic Development |
| Address | 310 – 1268 Fifth Avenue, Prince George BC, V2L 3L2 |
| Phone | 250.561.2525 |
| Email | dean@northerndevelopment.bc.ca |
| Website | northerndevelopment.bc.ca |

| Community Futures Sun Country | |
|---|---|
| Address | Po Box 1480 – 203 Railway Ave, Ashcroft BC, V0K 1A0 |
| Phone Number | 250.453.9165 |
| Website | cfsun.ca |

| Ministry of Jobs, Tourism, and Innovation – Regional Economic Operations | |
|---|---|
| Contact Name | Regional Economic Operations Department |
| Address | PO Box 9837 Stn Prov Govt, Victoria BC, V8W 9T1 |
| Phone | 250.952.6475 |
| Email | marilyn.rundfell@gov.bc.ca |
| Website | gov.bc.ca/jti/ |

| Ministry of Jobs, Tourism, and Innovation – International Investment and Company Attraction | |
|---|---|
| Contact Name | Michael Track, A / Executive Director – Investor Services |
| Address | 999 Canada Place, Suite 730, Vancouver BC, V6Cs 3E1 |
| Phone Number | 604.775.2202 |
| Email | michael.track@gov.bc.ca |

# 7. HIGHER EDUCATION

## LOCAL POST-SECONDARY INSTITUTIONS

| Thompson Rivers University | |
|---|---|
| Lillooet Training and Education Centre | |
| Jane Bryson - Coordinator | |
| Old Mill Plaza | |
| #10 - 155 Main Street | |
| PO Box 339, Lillooet, BC | |
| V0K 1V0 | |
| Phone | 250.256.4296 |
| Fax | 250.256.4278 |
| Email | jbryson@tru.ca |
| Website | tru.ca/regional_centres/lillooet |
| Office Hours | Tuesday – Thursday, 10am – 2pm |

The District of Lillooet believes that the "continued presence of the Thompson Rivers University (TRU) Campus is critical to creating post-secondary opportunities for our youth and training opportunities for our adult learners". Thus "it is a high priority to have TRU provide their expertise and be successful in Lillooet."[1] The Thompson Rivers University (TRU) Lillooet Training and Education Centre offer a comprehensive post-secondary educational opportunity in Lillooet.

First, a student at TRU Lillooet may complete an Associate Arts degree at the Lillooet campus. The Associate Arts degree is a two-year degree comprised entirely of first and second year University Credit courses such as Psychology, Anthropology, Spanish, and English. So, your Associate Degree can be used to ladder directly to many 4 year degrees at any post-secondary institution in Canada.

TRU is starting to offer 3rd and 4th year University credit courses on a part time basis. The time required to complete the 3rd and 4th year courses required for a bachelor's degree can be greatly reduced because of courses being offered through interactive TV (itv). Now we can beam courses from Kamloops or Williams Lake to the Lillooet campus. Before itv, a certain number of students were required to enroll in a course before it could be offered in Lillooet. Now a course may be offered to 3 or 4 students in Lillooet. Not every course from the TRU Kamloops catalogue will be offered via itv to students in Lillooet. But, TRU is expanding its itv course offerings because regional offices are starting to go itv. First year, second year, third year, and fourth year courses will be available in Lillooet via itv. TRU is invested in regional students and how regional students will get their education. We welcome you to higher education for Lillooet.

[1] District of Lillooet "Corporate Strategic Plan 2007 – 2017" (p.23)

# CLOSEST UNIVERSITIES

| Thompson Rivers University | |
|---|---|
| Main Campus | Kamloops |
| Other Campuses | 100 Mile House, Ashcroft, Cache Creek |
| Website | tru.ca |
| Distance to main campus from Lillooet | 170 km |

| University of the Fraser Valley | |
|---|---|
| Campus Locations | Abbotsford, Chilliwack, Mission, Hope |
| Website | ufv.ca |
| Distance to Hope Campus | 171 km |

| University of British Columbia | |
|---|---|
| Main Campus | Vancouver |
| Website | ubc.ca |
| Distance from Lillooet | 321 km |

| Simon Fraser University | |
|---|---|
| Main Campus | Burnaby |
| Other Campuses | Vancouver, Surrey |
| Website | sfu.ca |
| Distance from Lillooet | 321 km |

| Emily Carr University of Art and Design | |
|---|---|
| Main Campus | Vancouver |
| Website | ecuad.ca |
| Distance from Lillooet | 321 km |

| Capilano University | |
|---|---|
| Main Campus | North Vancouver |
| Website | capilanou.ca |
| Distance from Lillooet | 321 km |

| University of Northern British Columbia | |
|---|---|
| Main Campus | Prince George |
| Website | unbc.ca |
| Distance fromLillooet | 505 km |

*Data Source: gov.bc.ca/aved*

## UNIVERSITY - DISTANCE EDUCATION PROGRAMS

Most post-secondary institutions within the English speaking world deliver some portion of their academic catalogue via distance education methods. The material is usually, although not exclusively, delivered via the internet. Print-based delivery methods are also available and may not require the use of the internet. The benefit of distance education is that post-secondary studies can take place almost anywhere. British Columbia Institute of Technology (BCIT), Simon Fraser University (SFU), Thompson Rivers University (TRU), the University of British Columbia (UBC), and the University of Victoria (UVIC) are the main post-secondary institutions in BC and all offer distance education options. Interested parties are encouraged to pursue more information at their convenience.

| BCIT - Distance and Online Learning | |
|---|---|
| bcit.ca/distance/ | |
| Phone | 1.877.453.4058 |
| Email | distance@bcit.ca |

| SFU - Centre for Online and Distance Education | |
|---|---|
| code.sfu.ca/ | |
| Phone | 778.782.3524 |
| Toll Free | 1.800.663.1411 |
| Fax | 778.782.4964 |
| Email | codehelp@sfu.ca |
| Office Hours (Monday to Friday) | 9:30 AM to 4:30 PM |

| TRU - Open Learning | |
|---|---|
| tru.ca/distance.html | |
| Phone (Student Services) | 1.800.663.9711 |
| Email | student@tru.ca |

| UBC - Distance Learning | |
|---|---|
| ctlt.ubc.ca/distance-learning/ | |
| Phone | 604.822.9836 |
| Toll Free | 1.877.272.1422 |
| Fax | 604.822.5945 |
| Email | distance.education@ubc.ca |

| UVIC - Distance Education Services | |
|---|---|
| distance.uvic.ca/ | |
| Phone | 250.721.8476 |
| Email | maneshb@uvic.ca |

# 8. LILLOOET PUBLIC EDUCATION

## LILLOOET PUBLIC SCHOOLS CONTACT INFORMATION

| School District 74 Gold Trail District Office | |
|---|---|
| 400 Hollis Road, | |
| PO Bag 250, Ashcroft, BC, V0K 1A0 | |
| Phone | 250.453.9101 |
| Fax | 250.453.2425 |
| Website | sd74.bc.ca |
| Superintendent of Education | Teresa Downs |
| | Ext. (208) |
| Secretary Treasurer | Lynda Minnebarriet |
| | Ext. (200) |

| Cayoosh Elementary School | sd74.bc.ca |
|---|---|
| 351 - 6th Avenue | |
| PO Box 649, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.4212 |
| Fax | 250.256.7953 |

| George M Murray Elementary School | sd74.bc.ca |
|---|---|
| 281 Hollywood Crescent | |
| PO Box 968, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7543 |
| Fax | 250.256.4765 |

| Lillooet Secondary School | sd74.bc.ca |
|---|---|
| 920 Columbia Street | |
| PO Box 760, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.4274 |
| Fax | 250.256.4275 |

| Lillooet Adult Learning Centre | sd74.bc.ca |
|---|---|
| 76 - 5th Avenue | |
| PO Box 40, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7441 |
| Fax | 250.256.7446 |

| Upper St`at`imc Language Cultural and Education Society | |
|---|---|
| 650 Industrial Place | |
| PO Box 1420, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7523 |
| Fax | 250.256.7119 |
| Website | uslces.org |

MISSION

Gold Trail's mission is to create a dynamic and supportive learning community that inspires and enables all students to achieve their potential

SCHOOL DISTRICT VISION

Every student is successful

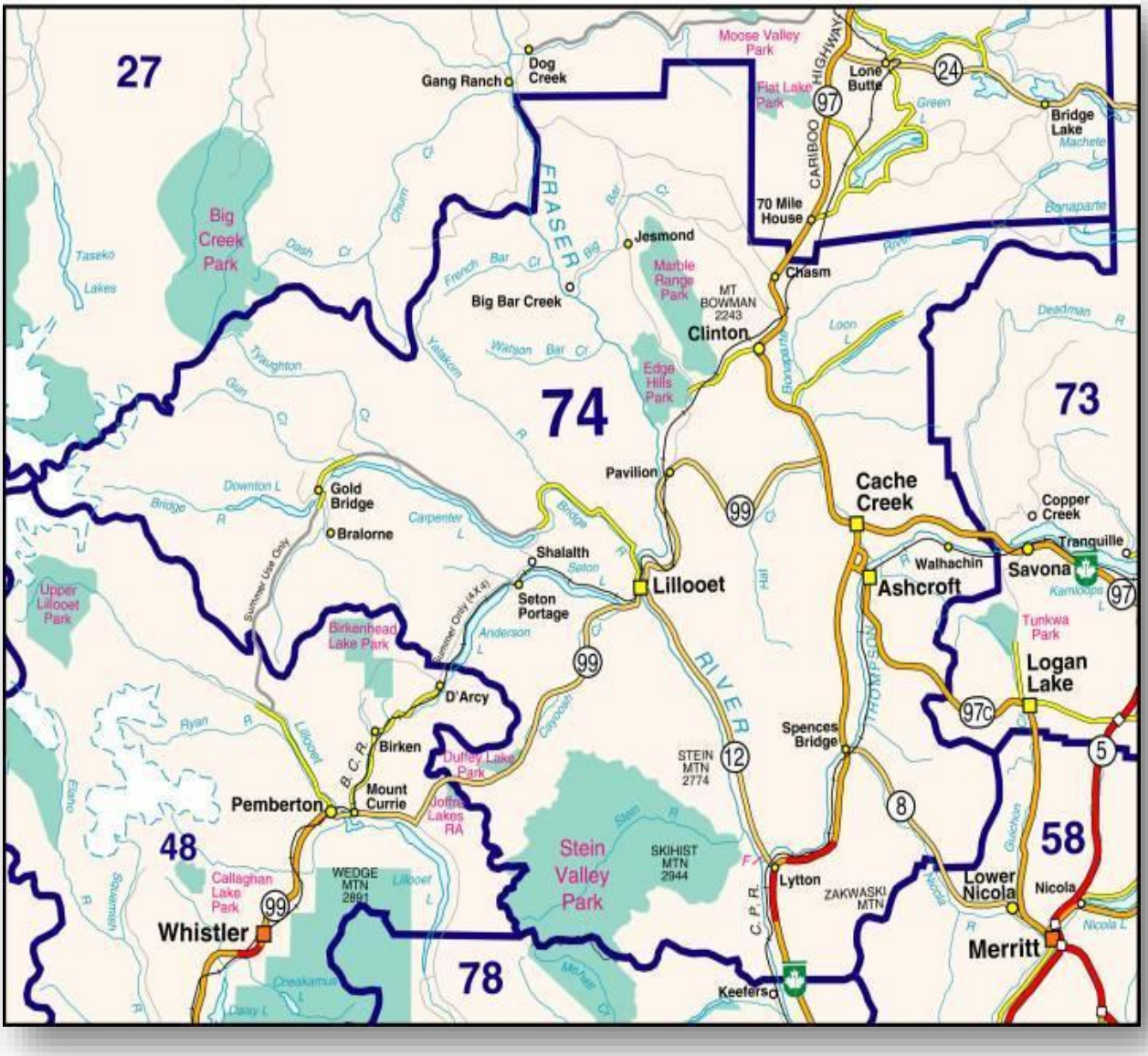
SCHOOL DISTRICT VALUES

*Learning* – at the core of all we do
Care and Appreciation – for all students, their families, and communities
*Tradition and Innovation* – valuing traditions and embracing new opportunities
*Meaningful Relationships* – built upon openness, honesty and respect
*High Standards* – believing that excellence is within everyone's reach

## BOARD OF EDUCATION

| | | | |
|---|---|---|---|
| Adrian, Valerie | Rural Area B | vadrian@gw.sd74.bc.ca | |
| Casper, Larry | Rural Area A | lcasper@gw.sd74.bc.ca | Home: 250.259.8399<br>Cell: 250.256.8567 |
| MacArthur, Jim | District of Lillooet | jmacarthur@gw.sd74.bc.ca | Cell: 250.256.3287 |
| Ranta, Carmen (Chair) | Rural Area D | cranta@gw.sd74.bc.ca | Home: 250.457.9119<br>Cell: 250.457.1250 |
| Rempel, Nancy (Vice-Chair) | Rural Area C | nrempel@gw.sd74.bc.ca | Home: 250.459.2348<br>Cell: 250.852.3334 |
| Roden, Christopher | Village of Ashcroft | croden@gw.sd74.bc.ca | |
| Varcoe-Ryan, Mavourneen | Rural Area E | Mvarcoe-ryan@gw.sd74.bc.ca | Home: 250.458.2282 |

## MAP OF BOUNDARIES OF SCHOOL DISTRICT #74 – GOLD TRAIL



## CONCURRENT STUDIES

| Contact Information for Concurrent Studies | |
|---|---|
| Wendy Blaskovic | Trades & Transition Coordinator, SD #74 |
| Phone | 250.453.9151 Ext. (235) |
| Email | wblaskovic@sd74.bc.ca |

Some of TRU Lillooet's catalogue (including its certificate programs) may be offered via Concurrent Studies. Concurrent Studies is based on a partnership between School District #74 Gold Trail (SD#74) and TRU Lillooet. This program allows students in grades 11 and 12 to take a TRU course and earn dual credit. TRU Concurrent Studies enables students to take a post-secondary course at TRU Lillooet and earn 4 elective credits in high school and 3 post-secondary credits in that course at the same time. Courses taken within TRU Concurrent Studies may be transferable to many post-secondary schools since they are first level courses. SD# 74 supports students furthering their education and gaining experience by paying tuition costs, books and associated fees. Concurrent studies is a wonderful opportunity that provides a post-secondary experience while within the support structures of the community and school.

## DISTRIBUTED LEARNING

| Contact Information for Distributed Learning | |
|---|---|
| K-9 Program | 10-12, Adult Program |
| 711 Hill Street (Ashcroft Elementary) | 435 Ranch Road (Ashcroft Secondary) |
| PO Box 40 | PO Box 910 |
| Ashcroft, BC | Ashcroft, BC |
| Phone: 250.453.9177 Fax: 250.453.9040 | Phone: 250.453.9050 Fax: 250.453.2605 |

Distributed learning is similar to what a lot of people think of as homeschooling. Distributed learners are registered with a school that is a Ministry funded school. So they must follow a set curriculum and set learning outcomes. The prescribed learning outcomes for the home-based student are identical to the prescribed learning outcomes for the student who attends school. Since distributed learning is based in the BC curriculum it can't have any religious grounding in it. It has to be secular. This is because the School Act says you can't have non-secular material in the curriculum if they're funding the student.

The Ministry of Education funds each student the same way they fund a student in the brick and mortar schools.

The Distributed Learning program is used by parents for a variety of reasons. For example, if a student can't work with a lot of noise then a quieter setting may be beneficial for that student. Or, if a student requires more or less time to grasp the material then (s)he can proceed at a pace that works for her/him.

The centre for Distributed Learning in Ashcroft can answer any questions students have and work with them over the phone or via email.

## LILLOOET SECONDARY FOUNDATIONS PROGRAM

The Lillooet Secondary Foundations Program is intended for high school students who encounter challenges in a traditional high school setting. Students who have dropped out of high school for various reasons are also a good fit for the program. Also, students who had attendance issues at the high school would benefit from a more relaxed atmosphere.

Enrollment is based on an interview process after the student is either recommended for the program by teacher(s) or expresses interest himself. The program also aims to develop skills that would help students to reintegrate into the high school setting. For example students would receive daily education focusing on interpersonal skills as well as personal mental and physical health. Students also focus on academic achievement. All of the courses offered at the high school are offered at the program except for programs which require special curriculum materials such as automotive mechanics or woodworking. But students do have the opportunity to attend classes at the high school for part of the day and come here for part of the day. This program is offered only to high school age students no older than 19. The primary educator is supported by a Teaching Assistant as well as an Aboriginal Student Support Worker. Funding works as if they were attending a regular program. Students in the program also have daily access to a counsellor. Feedback from students in the program has been very positive: "I've never thought I'd be able to finish a course" or "I've never attended school as much".

## ELEMENTARY CONNECTED CLASSROOMS

Elementary Connected Classrooms Project started in 2008. The project connects three intermediate classrooms in three different communities: Ashcroft, Lytton, and Lillooet. The purpose of the project is to connect students and teachers through engaging learning strategies supported by technology. The goal is to expand the community of learners and create a broader more diverse learning community. Each teacher is a member of this collaborative team which strives to embed critical thinking, creativity, collaboration, cross cultural understanding, communication, inquiry and the tools to be a socially responsible citizen in an online world into their teaching. Every day the classes connect via videoconferencing, during this time each teacher leads the learning in an area that is their passion and expertise. As a result, students in each classroom benefit from participating in the learning opportunities from each of the three teachers. The three classes remain connected throughout the day through moodle for online literature circles, current event discussions, numeracy problem solving challenges, and digital photography.

The last four years of the project have been extremely positive. Students are meaningfully engaged in their learning, they have taken ownership in their learning, and they have developed a technological literacy and proficiency that is outstanding. District assessments have also shown a positive impact in students reading and writing. The other success of the project has been the excellent professional development each teacher has received by working in a collaborative professional learning community that is focused on improving student learning opportunities.

# 9. COMMUNITY SERVICES

## LILLOOET PUBLIC LIBRARY

| Contact Information for Lillooet Library | |
|---|---|
| 930 Main Street, PO Box 939, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7944 |
| Fax | 1.866.704.3340 |
| Website | lillooet.bclibrary.ca/ |
| E-mail | lala@lillooet.bclibrary.ca |

The Lillooet Library provides a comprehensive range of services to the community of Lillooet. It is the centre of education, information and entertainment in the community. And there are no barriers to access these services. A library card is all you need to access the entire collection at the Lillooet branch. But the Lillooet Library can also provide access to materials throughout BC. For example, at Lillooet Library you can access the collection of any library in BC as far as books go, though inter-library loans. Also, Lillooet Library is part of a federation of libraries and your Lillooet Library Card is valid at all of them. This means that you can use your Lillooet Library Card at any library in the federation to access all of the materials in that library. Also, you can return the materials you borrow from one location to any of the libraries in the federation. Also, Lillooet Library accepts the BC One Card which is valid at any library in BC and allows access to each library's collection (with some restrictions). Also in the aim to remove barriers to access, there is a no late fee policy at Lillooet Library.

Lillooet Library also offers a world of information through its website (lillooet.bclibrary.ca/). The website provides access to a number of searchable databases all free of charge. For example, you can search e-books and audio books and load up your e-reader or iPod. Also, the Lillooet Library website provides access to auto repair guides, small engine repair manuals, encyclopaedias, scholarly journals, and health information. All the databases are searchable. This ensures you can find what you are looking for with ease. Again, all that is required is a library card.

Another service provided by the Lillooet Library is public computers. These computers have high-speed internet access. Also free Wi-Fi is available for personal computers or smart phones and with unlimited time.

The Lillooet Library catalogue is diverse and includes music CDs, audio books on tape and CD, and DVD movies. The DVD collection and music collections (CDS) are constantly growing and have proved to be quite popular.

In terms of books, the Lillooet Library has an extensive adult fiction collection which is constantly being renewed. The children's collection is very extensive for our population base. It is also a well-used section.

Funding is primarily drawn from our local tax base. Since our tax base is relatively modest, the BC government funds us heavily compared to Libraries in larger communities with a greater tax base. Lillooet Library is funded under the department of libraries and literacy which in turn falls under the Ministry of Education. Our mandate is to support community

education focusing on birth to grave learning. In this vein, the main programs at Lillooet Library focus on improving literacy in the community. Programming to that effect includes an adult literacy program. This program is designed to give support to adults who need to upgrade their math, computer, literacy skills. Lillooet Library also focuses on improving literacy in children and regularly offers programs with that purpose in mind. The Library also offers outreach services. Here the aim is to go out into the community where children gather to bring literacy. The Library also employs a liaison between the community and the school district. This joint effort is meant to pool resources and have both agencies provide better programs over all. The Library also offers home library services. So if are unable to get to the library you can register and a volunteer will deliver library materials to you on a regular basis.

The summer reading program is a summer camp for children ages 6-12 children. We hire summer students who plan it and deliver it. It is a growing program which provides access to literacy and educational activities.

The stated Mission of the library is that :

Our community library services enhance global connections, literacy, cultural life, and learning experiences for all by providing supportive, accessible, and inviting environments to nurture the love of reading and the pursuit of knowledge.

# LILLOOET REC CENTRE

| Contact Information for Lillooet & District Recreational, Educational, and Cultural Centre | |
|---|---|
| 930 Main Street, PO Box 610, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7527 |
| Fax | 250.2564037 |
| Website | Lillooetbc.ca |
| Email | rec@lillooetbc.ca |

The Lillooet Recreation, Cultural, and Educational (REC) Centre provides a range of services that aim at improving physical and mental well-being of the community. The REC Centre was built largely by volunteers. So there is a lot of community spirit in this facility. The REC Centre houses a 25m six lane swimming pool with sauna and whirlpool. The pool also contains a number of additions meant for children such as a diving board and basketball hoop as well as floating devices. Adjacent to the pool are men's and women's change rooms each containing a shower room, toilets and lockers. The REC Centre also has many multipurpose rooms which can be rented for classes or special functions. Also there is a day care centre. A large gymnasium offers a full size basketball court and can be configured to support a variety of other sports including badminton and volleyball. The gym also contains bleachers to house spectators for concerts and sporting events. The gym is divisible into two equal areas by a large curtain which allows for two different uses at one time. The gym also houses a lighting room and sound room for productions. There is a commercial grade kitchen adjacent to the gym which is open for public use. Since it is commercial grade it can be used to produce food for sale. The REC Centre also provides a weight room with a variety of cardio equipment such as treadmills, stationary bikes, and a rowing machine. The weight room also contains free weights as well as a variety of weight machines. A squash court and racquetball court are also available for use. Men's and Women's change rooms can be accessed from the gym as well as from the weight room. Each change room contains two showers, washroom facilities, as well as lockers. In addition to the washroom facilities in the pool and weight room there are large men's and women's washrooms to accommodate large events. The REC Centre also houses a regulation sized ice arena with five change rooms. The rink is used by figure skaters, hockey players and public skating. Also in the ice rink area is a concession which opens during hockey tournaments. Spectators can stay warm on the heated bleachers.

All of the facilities may be accessed by either a drop in fee, a punch pass, or a facility pass. Youth rates, child rates, senior rates, and adult rates are available. The REC centre offers only full facility access. This means that one fee will cover your use for the entire facility for one day. REC Centre staff also manage some park lands throughout the community. A large soccer field is located on the REC Centre grounds. Conway Park is a full size soccer field and baseball diamond that also houses concession facilities. Miyazaki house is a heritage building which hosts free music concerts in the summer.

The REC Centre hosts a variety of programs and is always looking to establish new programs. Some examples of programs offered in the past include dance classes for children and adults, yoga class, kayak lessons, self defense programs, Red Cross swim lessons, and carpet bowling.

## SERVICE BC

| Contact Information for Service BC | |
|---|---|
| A 639 Main Street, Bag 700, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7548 |
| Fax | 250.256.4546 |
| Website | servicebc.gov.bc.ca |

The Service BC vision is "excellence and innovation in the delivery of government services for the citizens of BC."

Lillooet's Service BC office is the provincial government's connection to the members of this community. Service BC Lillooet, while not a decision making entity, does have extensive contacts in Victoria and Front counter BC. If the office is unable to get the customer what they need they can quickly assist the customer in accessing the resources he/she needs to move forward. The Service BC office in Lillooet offers a wide range of services. Key services offered at the Lillooet office include: Medial Services Plan, BC Hydro payments, Ministry of Employment and Income Assistance services, Notary services, Rural Property Tax payments, Fish and Wildlife licensing, Residential Tenancy, Vital Statistics Agency registrations and certificates, electrical and gas permits, business registration, and federal government forms.

## EMPLOYMENT COUNSELLING – OPEN DOOR GROUP

| Contact Information for Open Door Group Lillooet | |
|---|---|
| 639B Main Street, PO Box 2170, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7758 |
| Fax | 250.256.7768 |

There has been a transformation in terms of employment services delivered throughout the entire province of BC. All employment services are now offered through Open Door Group. With the new employment program, employment services are available to any unemployed job seeker. There are two different levels of services for job-seekers. One is self-services which is general services that anybody can use. Anybody can walk into the centre and gain access to the resource room after they register that they are there. Clients can access computers, they can use the phones, they can use equipment, they can access certain workshops, and they can get help from the resource centre advisor. The advisor can provide support such as info on how to write cover letters or resumes. This level of services is open to anyone.

If someone needs extra support they can interact one on one with a case manager who will do employment planning, maybe to do a few assessments, and try to come up with an action plan on what that individual needs to connect him with the labour market as soon as possible. Maybe someone needs to go out to have a functional capacity assessment after an accident. Or maybe someone needs job coaching after they are employed and some follow up services. The program is designed to support a wide range of clients from people who might just need access to a computer or the internet or job board to somebody who perhaps has

never worked in their life and have some significant barriers to their employment and will continue to. The main purpose of this is to connect unemployed British Columbians to the labour market for sustained employment. It is easy to get somebody a job. But there is also effort that needs to be put in to make sure that person is able to maintain their employment as well. Those case management services are available to those people living in that catchment area.

There are also services available for employers. If you are in a community where there is a major employer and there is a lot of dependence on that single employer and if they're aware there is going to be an imminent lay off or labour adjustment, Open Door Group can work with them to reduce that transition time of somebody being unemployed. The aim here is to try to start helping clients connect to employment so they are not unemployed for a long time. Prior to Open Door Group, provincially and federally there were ten different employment programs. These were not offered in a unified way. The major improvement of this is that no matter what kind of services are needed, they are all available in one place. So for example I am trying to attract certain kind of investor who requires certain skills and employees, if we have a heads up on that, we change our curriculum based on that.

## LILLOOET FIRE DEPARTMENT

| Contact Information for Lillooet Fire Department | |
|---|---|
| PO Box 458, Lillooet, BC, V0K 1V0 | |
| Fire Hall (non-emergency) | 250.256.7222 |
| Fax | 250.256.4518 |
| Email (chief) | lfd.chief@lillooetbc.ca |

*Mission Statement:*

"The mission of the Lillooet Fire Department is to protect the lives and property of our citizens and visitors we serve, by providing prompt and professional services in the event of fire, medical emergencies and disasters or any other event which may threaten the public welfare"

The Lillooet Fire Department (LFD) is mostly made up of Volunteers. The fleet includes two engines, a water supply truck used to refill the engines, a support vehicle containing tools and first aid, and a command vehicle. The Lillooet Fire Department (LFD) is integrated with the 911 service for Lillooet. Ultimately this integration improves the quality of fire protection for the community. The LFD services everything within the municipal boundaries. Beyond the municipal boundaries the LFD may service Cayoosh Band or Fountain Band if certain conditions are met. The LFD has a mutual aid agreement with Lytton. It allows for the LFD to respond to fires in Lytton and for Lytton Fire Department to respond to fires in Lillooet given that doing so does not threaten the ability of either Fire Department to provide care in its own community. The LFD will also go outside municipal limits if an incident on the outskirts threatens to spread to the community. The LFD is in the process of establishing policy designed to increase the speed and quality of training. Also it hopes to make fire training a creditable course through the school district to prepare students for a career in any type of emergency responder role.

## LILLOOET AND DISTRICT RESCUE SOCIETY

| Contact Information for Lillooet and District Rescue Society | |
|---|---|
| PO Box 717, Lillooet, BC, V0K 1V0 | |
| Max F. Paulhus | |
| Personal Phone / Fax | 250.256.0191 |
| Personal Cell | 250.256.1749 |
| E-mail | lillooet_rescue@telus.net |

Lillooet & District Rescue Society provides road rescue service for Lillooet and Squamish-Lillooet Regional Districts A & B. They also go into TNRD Areas C and E (Lytton, Cache Creek). "Road Rescue" means motor vehicle accidents. The society is trained in the use of the Jaws of Life. Members are trained in Emergency First Aid, WCB Level 1, Auto Extrication Level 1, and Steep Embankment Training.

## CLUBS AND SOCIETIES

| BPO Elks No. 467 | |
|---|---|
| 920A Moha Road | |
| Phone | 250.256.7150 |

| Lillooet Lion's Club | |
|---|---|
| Phone | 250.256.7811 |
| Website | e-clubhouse.org/sites/lillooet/ |

| Lillooet Naturalist Society | Promoting the enjoyment of nature to naturalists and the public |
|---|---|
| Website | lillooetnaturalistsociety.org/ |

| Order of the Royal Purple | |
|---|---|
| 920A Moha Road | |
| President | Myrna Isaackson |
| Phone | 250.256.7150 |

| Lillooet District Historical Society | |
|---|---|
| President | Joan Duguid |
| Contact | Sue Bell @ Lillooet Museum |
| Phone | 250.256.4308 |

| Lillooet Hospital Foundation | |
|---|---|
| Chairperson | Carol Gallant |
| Phone | 250.256.4016 |

| Lillooet Radio Society | 100.5 FM |
|---|---|
| 475 Main Street | |
| Phone | 250.256.2113 |
| Website | radiolillooet.ca |

| Lillooet Farmer's Market | Across from post office on Main Street |
|---|---|
| President | Carol Vanderwolf |
| Phone | 250.256.1547 |

# 10. HEALTH SERVICES

## LILLOOET HOSPITAL & HEALTH CENTRE

| Contact Information for Lillooet Hospital & Healthcare Centre | |
|---|---|
| 851 Murray Street, Bag 300, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.4233 |
| Fax | 250.256.1336 |

*The Vision:*

"To set new standards of excellence in the delivery of health services in the province of British Columbia "

*Our Values:*

"Quality, Integrity, Respect, Trust"

Medical Services offered at the Lillooet District Hospital are comprehensive. The hospital contains a lab, an x-ray room, a cast room, and a three bed emergency room. For patients requiring overnight observation there are six acute-care beds. There is a maternity ward where doctors perform deliveries and C-sections. In the OR department, doctors perform scope procedures, dental surgeries and obstetrics. Elective surgeries that are done in Lillooet also take place in this room. Lillooet District Hospital also offers a wide range of specialist services from pediatricians to dieticians who visit the hospital on a regular basis. Palliative care, which is furnished by Lillooet District Hospital Foundation, is also available in Lillooet. In the field of Community Care, the hospital employs home and community nurses who visit patients out in the community. They focus on maintaining the patient's independence by supporting the day to day activities of their patients in addition to providing minor medical services. The hospital also employs two nurses who work closely with the first nations bands to respect their traditions and their practices while providing them with medical care. The hospital aims to provide Lillooet with access to a community nurse seven days a week during office hours. So people who have questions pertaining to a medical issue can get ahold of a nurse over the phone and, if need be, the nurse can follow up and attend the site. Lillooet District Hospital offers a wide range of mental health services via its two mental health clinicians. Lillooet's mental health clinicians can access Psychiatrists in Kamloops via video conferencing. So some patients will access Psychiatrists in Kamloops via video conferences that take place at the Lillooet Hospital.

There is a doctor on call 24 hours a day. And during the day there is always one doctor on the premises and sometimes up to three. We have a room dedicated to that.

Mountain View lodge is a residential care facility adjacent to the hospital. It consists of 22 beds and one respite bed. This facility is ideal for persons who are unable to care for themselves. It mainly serves elderly patients. Persons suffering from dementia or early stages

of dementia are especially well-cared for within the lodge. Residents of Mountain View Lodge have 24/7 access to professional health care as well as stimulating recreational activities organized by the in-house recreation director or volunteers. LPNs administer and implement a care plan designed by a doctor. Activities such as arts and crafts or bowling are provided for residents. Mt. View Lodge also benefits from the services provided by volunteers who bring entertainment and social interaction to the lodge. The lodge also employs a recreation director who makes sure that everybody is having a good time.

The Lillooet Hospital also offers rehabilitation services via a rehabilitation assistant. At the time of publishing, Lillooet District Hospital is in the process of acquiring its own physiotherapist dedicated to Lillooet. Consequently, people won't have to travel out of town in order to access physiotherapy care. Six assisted living suites, called Sumac suites, are located within the hospital complex. They are rented and allow easy access to meals and some medical attention while allowing for a large measure of independence. Each Sumac Suite is outfitted with a bathroom and wheelchair accessible shower.

## INTERIOR PUBLIC HEALTH – LILLOOET BRANCH OFFICE

| Contact Information for Interior Public Health | |
|---|---|
| 951 Murray Street (Hospital Site), Bag 700, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.1314 |
| Fax | 250.256.1332 |
| Website | Interiorhealth.ca |

Public Health programs focus on the promotion of health, prevention of disease and injury and protection of the environment. Programs and services are offered at the individual, group and community levels, and in a variety of sites (homes, schools, care facilities, workplaces, health units, etc.). Programs include:

-prenatal and postpartum programs
-Infant and child programs ages 0-5
-school and teen programs
-adult and senior programs
-educational resources
-licensure of facilities
-environmental health programs

## LILLOOET MEDICAL CLINIC

| Contact Information for Lillooet Medical Clinic | |
|---|---|
| 107 – 8th Avenue, PO Box 850, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7505 |
| Fax | 250.256.7591 |
| Office Information | |
| Hours of Operation | Monday to Friday (9:00 am to 5:30 pm) |

| | |
|---|---|
| Staff | 4.5 full-time physicians<br>(includes one Surgeon and one Anesthetist) |

The Lillooet Medical Clinic office is set up to provide comprehensive care for all aspects of family medicine. This includes obstetrics. Patients will be referred to the appropriate specialists when another opinion or special procedure is required.

## LILLOOET DENTAL CLINC

| Contact Information for Dr. David Soffer Inc. & Associates | |
|---|---|
| 119 – 8th Avenue, PO Box 188, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.4616 (24 hour answering service |
| Fax | 250.256.4757 |
| E-mail | dsoffer@telus.net |
| Hours of Operation | Please contact office for current hours |
| Services | General Family Dentistry, Crown & Bridge including Lumineers, Complete and Partial Dentures, Invisalign Orthodontics, Root Canal Therapy, Preventitive Care, Treatment of Gum Disease, Tooth Whitening |

Lillooet Dental Clinic accepts all dental plans at their office. Many dentist's offices require patients to pay up front and then deal with their insurance provider alone. Lillooet Dental Clinic deals directly with insurance companies on behalf of their patients. They also see children as early as the age of one. They have digital X-ray and do cosmetic dentistry such as veneer which is a type of crown and bridge that's not invasive of the tooth.

## LILLOOET FRIENDSHIP CENTRE SOCIETY

| Contact Information for Lillooet Friendship Centre Society | |
|---|---|
| 357 Main Street, PO Box 2170, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.4146 |
| Fax | 250.256.7928 |
| Website | Lillooetfriendshipcentre.org |

The Lillooet Friendship Society provides a wide range of free services to the community of Lillooet. Child and youth mental health services are available for anyone with mental health issues. An addictions counsellor is also available for all ages. In addition to the addictions counsellor there is a once per week addiction prevention program delivered in a group format. A victim assistance program provides services to anyone who has been a victim of a crime or a horrific disaster such as a suicide or unexpected death. This is a counselling service but also includes support for doing things like court procedures. Lillooet Friendship Society also offers a "Stop the Violence" program intended for people in an abusive relationship who wish to transition out. Cultural programs are also available to the public.

The Lillooet Friendship Society also runs a food bank during the week. It operates out of the Friendly Treasures thrift store on Main Street. Thrift store sales go toward the operation of the food bank. The "Family Place", located in the Old Mill Plaza, offers an infant development program for children up to and including the age of three. They provide support and clinical

assistance to families where children are experiencing either physical or mental challenges. Chillaxin Youth Centre provides programs and services for persons aged 12-24. There is a Pre-school in the REC Centre. Funding for these programs is through provincial and federal governmental agencies. The majority comes from the Ministry of Children and Family. All the programs are free.

## FIRST NATIONS & INUIT HEALTH

| Contact Information for Lillooet Health Centre | |
|---|---|
| 296 Main Street, PO Box, 131, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7017 |
| Fax | 250.256.4930 |
| E-mail | rose_marie_james@hs-sc.gc.ca |

First Nations and Inuit Health is a federal agency in Lillooet that employs at least two community health nurses who serve eight First Nations communities surrounding Lillooet. The delivery of these services takes place out in the communities served rather than at one central location. The mission of this agency is to coordinate the development, implementation and evaluation of a comprehensive, culturally sensitive health program. The communicable disease program and maternal/child health program are the most important services available through this agency. Care is provided in these areas essentially through education (either verbal or written) and immunization. The communities served also benefit from home care nurses who perform some specific care for the chronic patient. Mental health is also addressed.

## LILLOOET WELLNESS CENTRE

| Contact Information for Lillooet Wellness Centre | |
|---|---|
| 836 Main Street, PO Box 2147, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.2156 |
| Website | lillooetwellnesscentre.ca |
| Hours of Operation | Monday to Saturday (10:00 am – 5 pm) |

The Wellness Centre in Lillooet provides a range of services that aim at improving the health of its patrons. We have three registered massage therapists. We offer a whole array of spa services including an infrared sauna that helps with muscular or joint pain, detoxification, and skin issues. Hot showers are also available. The Wellness Centre offers intense pulse light therapy for skin rejuvenation or hair removal. Acupuncture is available on a weekly basis. And clinical counsellors are available for couple's therapy. Patrons also have access to an energy healer and astrologer.

# 11. TRANSPORTATION

## MAJOR TRANSPORTATION ROUTES

### PACIFIC GATEWAY

Canada's Pacific Gateway is a world-class transportation network. British Columbia's ports in Vancouver and in Prince Rupert are Asia's closest ports of entry on the west coast of North America, up to 58 hours closer than the ports of Los Angeles and Long Beach. Canadian ports and airports are seamlessly integrated with road and rail connections to all major U.S. economic centres. Thus, Canada's west coast ports are the preferred gateway for Asia Pacific trade and integral parts of a competitive, seamless supply chain reaching into the economic heartlands of North America. Also, British Columbia is the only gateway on the west coast of the Americas served by three transcontinental railways. Future developments within the Pacific Gateway are focused on continued improvements in the areas of comprehensive road, rail, and port infrastructure.

## NORTHERN CORRIDOR

The Northern Corridor spans over half of continental Canada and reaches well into the heartland of North America south of Chicago, USA. It travels through the lowest elevations of the Americas' great continental divide, also known as "Yellow Head Pass" and forms the straightest, shortest, flattest route for Asian-North American trade. Three Northern British Columbia ports - Kitimat, Stewart, Prince Rupert - as well as the Port of Vancouver provide efficient access to this corridor. Each port offers unique advantages and services that meet the needs of the region and international trade.

Trans-continental rail, Trans-Canada Highway and direct air service into international Air Hubs are in place. The corridor services businesses covered by the North American Free Trade Agreement, through a variety of break bulk and container services in ports owned and operated by governments and those run by private port interests.

The Northern Corridor is less impeded by road closures, significant weather patterns and avalanches that the Southern Canadian Corridor. It provides "one less day" shipping advantage to or from Asia compared to all other North American Port locations including Vancouver and all USA pacific ports.

Existing trade in Kitimat and Prince Rupert include aluminum and paper shipped via privately owned break-bulk terminals, transhipment of petrochemicals through privately owned facilities, barge service and container port services. Growth is expected in energy exports including liquid natural gas, petroleum, and container capacity.

Canadian National Railway (CN Rail) reaches well into the heartland of America with shipping agreements in place with major US rail carriers. CN has made significant investments in the Northern Corridor rail line including extended sidings, upgrades to signal systems, increased bridge and tunnel clearances. The corridor is serviced by five international airports and four northern airports with Prince George offering international services. The largest passenger service airport west of Prince George and north of British Columbia's Okanagan region is the Terrace-Kitimat Northwest Regional airport.

## THE ROAD NETWORK

Highway 99
From the Canada/USA boundary through Surrey, Delta, Richmond, Vancouver, West Vancouver, Squamish, Whistler, Pemberton, Lillooet, Pavilion, and Marble Canyon to the Junction with Route 97 north of Cache Creek.

Highway 12
Lytton – Lillooet
From the junction with Route 1 at Lytton to junction with Route 99 near Lillooet

Highway 1 – TRANS CANADA HIGHWAY
The Trans-Canada Highway between Victoria British Columbia and St. John's Newfoundland, joins all ten provinces of Canada. The British Columbia portion of the highway runs along the path of the Canadian Pacific Railway through the Thompson Nicola Regional District to the Port of Vancouver.

# NORTHERN CORRIDOR SPECIFICATIONS

| Commercial Vehicle Without Permit | Specifications |
|---|---|
| Maximum Width | 2.59 meters |
| Maximum Height | 4.15 meters |
| Maximum Vehicle Weights | |
| Super B | 63,500 kgs |
| Single Axle | 9,100 kgs |
| Tandem Axle (Set) | 17,000 kgs |

| Commercial Vehicle With Permit | Specifications |
|---|---|
| Maximum Width | 4.4 meters |
| Maximum Height | 4.72 meters |
| Maximum Vehicle Weights | |
| Super B | 64,000 kgs |
| Single Axle | 9,100 kgs |
| Tandem Axle (Set) | 23,000 kgs |

## OVERHEAD CLEARANCE

| Yellowhead Highway 16 from BC Border to Prince Rupert | Clearance (meters) |
|---|---|
| Khyex River Bridge | 5.95m |
| Kitsequcla Overpass | 5.70m |
| Tete Jaune Underpass | 4.96m |
| Highway 37 from Hwy 16 North to Yukon Border | |
| Irving River Bridge #2 | 5.74m |
| Devil Creek Bridge | 5.74m |
| Highway 37 from Hwy 16 South to Kitimat | |
| Williams Creek Bridge | 4.97m |
| Hirsch Creek Bridge | 4.72m |
| Kitimat River Bridge | 5.08m |
| Highway 97 from Dawson Creek to Quesnel | |
| Bellows CN Railway Overpass | 4.96m |
| Hixon CN Railway Overpass | 4.90m |
| Stoner CN Railway Overpass | 4.70m |
| Red Rock CN Railway Overpass | 4.64m |
| Bijoux CN Railway Overpass | 6.30m |
| West Pine CN Railway Overpass | 4.92m |
| East Pine CN Railway Overpass | 5.00m |
| Salmon River Bridge | 5.40m |

## PROVINCIAL PERMIT CENTRE

For more information on receiving a commercial vehicle permit please contact **1.800.559.9688.** The core hours of service are from 5am to 10pm, seven days a week and most statutory holidays. The 1-800 number is available to callers anywhere in Canada or the United States. Permits available through this line include:

-highway crossing permits
-non-resident commercial vehicle permits
-motor fuel tax permits
-extra-provincial temp. operating permits
-term oversize and overweight permits
-single trip oversize and overweight permits

## HIGHWAY DISTANCES

| Metro Area | Distance (km) |
|---|---|
| Whistler | 131 km |
| Kamloops | 197 km |
| Vernon | 287 km |
| Kelowna | 297 km |
| Tsawwassen Ferry Terminal | 319 km |
| Vancouver | 321 km |
| Richmond | 322 km |
| Vancouver Airport | 331 km |
| Horseshoe Bay Ferry Terminal | 341 km |
| Swartz Bay Ferry Terminal | 365 km |
| Victoria Airport | 377km |
| Departure Bay Ferry Terminal | 397 km |
| Victoria | 399 km |
| Seattle Washington | 434 km |
| Edmonton Alberta | 975 km |
| Portland | 716 km |
| Calgary | 790 km |
| Prince Rupert | 1227 km |
| Kitimat | 1135 km |

*Data Source: [http://www.th.gov.bc.ca/popular-topics/distances/calculator.asp](http://www.th.gov.bc.ca/popular-topics/distances/calculator.asp)*

## RAILROADS

| CN Rail | cn.ca |
|---|---|
| Main or Branch Line | Secondary Mainline |
| Closest Shipping yard | Squamish Terminals (193 km southwest) |
| Northern Access | Prince George and Port of Prince Rupert |
| Southern Access | Port of Vancouver, Southern United States |
| Distance to nearest switching Yard | 0km |

# COMMERCIAL AIRPORTS

| Kamloops Airport - YKA | | |
|---|---|---|
| Hub Status | Commercial / Recreational / Corporate | |
| Distance from Lillooet | 171 km | |
| Hour of Operation | | |
| Terminal | 20 hrs / day (4:00 - 24:00) | |
| Airfield | 24 / 7 | |
| Approved Capital Expansion | 2,000 ft. runway extension | |
| | 2 new taxi ways | |
| Customs Point of Entry | Yes (only during commercial flight hours) | consult: cbsa-asfc.gc.ca/menu-eng.html |
| Foreign Trade Zone | No | |
| Full Instrumentation | Yes | Instrument Landing System (ILS) |
| No. of Runways | 2 | |
| Runway dimensions | 1 @ 8,000 ft. long & 148 ft. wide | |
| | 1 @ 2,780 ft. & 49 ft. wide | |
| Carriers | Air Canada Jazz, Central Mountain Air (CMA), WestJet, FedEx, Canadian Helicopters, Highland Helicopters, Westair Aircraft Charter | |
| Daily Non-Stop Flights | 11 departures | |
| | 11 arrivals | |
| Website | kamloopsairport.com | |

| Kelowna International Airport - YLW | |
|---|---|
| Hub Status | International |
| Distance from Lillooet | 297 km |
| Hours of Operation | |
| Terminal | 24 / 7 |
| Approved Capital Expansion` | New loading bridge, Air terminal building Project, Additional Sewer |
| Customs Point of Entry | Yes |
| Foreign Trade Zone | No |
| Full Instrumentation | Yes |
| No. of Runways | 1 |
| Runway Length | 2,713 m |
| Carriers | WestJet, Central Mountain Air, Air Canada, Air Canada Jazz, Horizon Air, Regional 1 |
| Weekly Non-Stop Flights | 224 |
| Website | kelowna.ca/cm/page68.aspx |

| Vancouver International Airport – YVR | |
|---|---|
| Hub Status | International |
| Distance from Lillooet | 331 km |
| Hours of Operation | 24 Hours / 7 Days |
| Approved Capital Expansion | Yes |
| Customs Point of Entry | Yes |
| Foreign Trade Zone | No |
| Full Instrumentation | No |
| No. of Runways | 3 |
| Runway Length | 3018 m, 3597 m, 2225m |

| Vancouver International Airport | |
|---|---|
| Weekly Non-Stop Flights | 63 |
| **Flights to Largest Cities Served** | |
| New York | 21 |
| Tokyo | 21 |
| Seoul | 14 |
| Mexico City | 7 |
| **Destination** | **# of Weekly Flights** |
| Asia | 103 |
| Australia / New Zealand | 11 |
| Europe | 33 |
| Mexico | 45 |
| South America | 0 |
| United States | 530 |

## Lillooet Airport

The District of Lillooet owns and operates a municipal aerodrome located at 325 Jones Road (exit from Highway 12 onto Airport Road) on the East side of the Fraser River.

The runway is 3,990 feet long and 70 feet wide with a clearing of 50 feet and will land a 40,000 pound plane.

The services provided by the Lillooet Municipal Airport are fuel sales, tie downs, pilot lounge and two trailer pad rentals.

Fuel sales are via an automated Card Lock System. This system accepts VISA, MasterCard, Discover Card and our own Lillooet Municipal Airport credit cards.

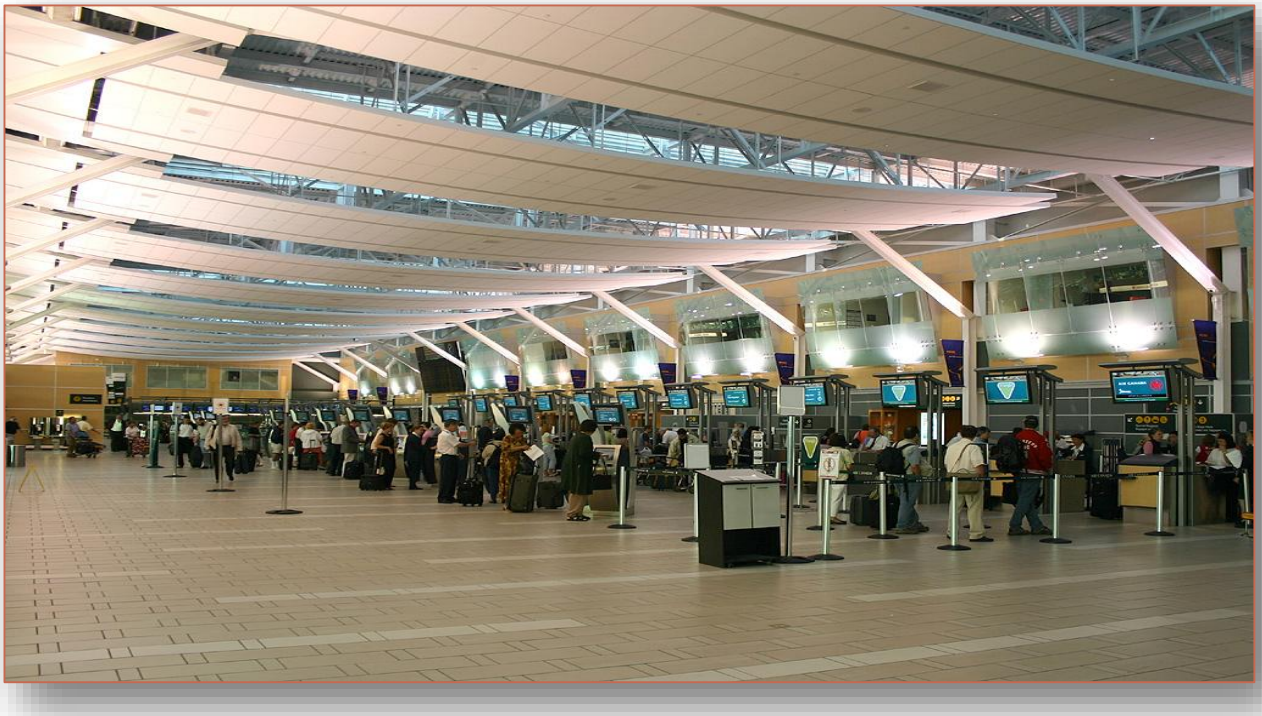
The District of Lillooet is currently reviewing the possibility of extending the runway to 5,000 feet and adding lighting.

**Fuel Prices**

Jet A $1.50 / litre
100 LL $1.50 / litre
(Tax Included) (Prices Effective June 8, 2011)

**Contact numbers are as follows:**

Monday to Friday
8:30 am - 4:30 pm, 250-256-4289
Weekend and Holidays 250-256-1584
Kamloops Traffic Control 250-376-7941
Police, Fire, Ambulance Dial 911



# PORTS

| Port Metro Vancouver | |
|---|---|
| Distance from Lillooet: | 321km |
| Location of Port | Vancouver |
| Terminals: | Port Metro Vancouver offers 28 deep-sea and domestic marine terminals that service five business sectors: automobiles, break-bulk, bulk, containers, and cruise.<br>For more information on individual terminals, please visit: portmetrovancouver.com/users/landoperations/terminalsandfacilities.aspx |
| Type of Port: | Ocean |
| Channel Depth: | Minimum - 10 meters (33 feet) |
| Turning Basin: | Unlimited |
| Shallow Water Barging Facilities: | Yes |
| Deep Water Barging Facilities: | Yes |
| General Cargo Facilities: | Yes |
| Containerized Facilities: | Yes |
| Storage Facilities: | Yes |
| Highways Serving Port: | #1, #1A, #7A, #99, #19 |
| Railways Serving Port: | CN Rail, CP Rail, BC Rail, Burlington Northern Santa Fe Railroad |
| Types of Services: | Bulk, Break-Bulk, Automobile, Container, Cruise |
| Port Address: | 100 The Pointe, 999 Canada Place Vancouver, BC, V6C 3T4 |
| Website: | portmetrovancouver.com |

| Port of Kitimat | |
|---|---|
| Distance from Lillooet | 1135km |
| Location of Port | Kitimat |
| Terminals | Rio Tinto Alcan - Break Bulk Terminal, Methanex Petrochemical Terminal, Eurocan Breakbulk Terminal |
| Type of Port | Deep Sea |
| Channel Depth | 45 - 200 fathoms, 18-185 meters (59-607 ft.) |
| Turning Basin | 1.1 - 2.2 nautical miles |
| Shallow Water Barging Facilities | Yes |
| Deep Water Barging Facilities | Yes |
| General Cargo Facilities | Yes |
| Containerized Facilities | No |
| Storage Facilities | Yes |
| Highway Serving Port | Highway #16 via #37 |
| Railway Serving Port | CN Rail |
| Types of Services | Bulk/Break-bulk, Methanol, Amonia condensate, Pitch, Alumina, Bauxite Condensate |
| Imports | Pitch, Alumina, Bauxite Condensate, Methanol |
| Exports | Kraft Paper, Aluminum Sheeting |
| Shipping Lines | Waterfront Shipping, Gearbulk |
| Shipping Agents | GW Nickerson Co., TNC Canada |
| Custom Brokers | GW Nickerson Co., Moore E T S Services |
| Tug & Barge | SMIT Marine, Seaspace International |

| Port of Prince Rupert | |
|---|---|
| Distance from Lillooet | 1227km |
| Location of Port | Prince Rupert |
| Terminals | Fairview (container) Terminal, Ridley Terminals (coal, petroleum coke, wood pellets), Prince Rupert Grain, Northland Cruise Terminal, Atlin Terminal (smaller pocket cruise terminal) |
| Type of Port | Ocean |
| Channel Depth | 35 meters |
| Shallow Water Barging Facilities | Yes |
| Deep Water Barging Facilities | Yes |
| General Cargo Facilities | Yes |
| Containerized Facilities | Yes |
| Refrigerated Container Facilities | Yes |
| Cruise Ship Facilities | Yes |
| Storage Facilities | Yes |
| Highway Serving Port | #16 |
| Railway Serving Port | CN Rail |
| Types of Services | Bulk/break-bulk: Coal, Petroleum Coke, Wood Pellets, Grain, Logs |
| Imports | Retail (including electronics, apparel, furniture, auto parts); petroleum products; industrial inputs (tiles, glass) |
| Exports | Midwest - specialty crops; scrap metal, recycled paper<br>British Columbia – Forest products (lumber pulp, logs); aluminium, seafood |
| Container Shipping Lines | Cosco, Hanjin, Yang Ming, K-Line, Quickload Transloading Services, Shipping Agents, GW NickersonCo., Northcoast Shipping,Rupert Marine Shipping, Tidals Transport & Trading Ltd. |

## PORT SHIPPING DISTANCES

The following table is in nautical miles. The Time/Speed/Distance calculations are at 16.1439 Kn/Hr., the average speed that The Port of Vancouver uses for calculating their shipping to Yokohama, Hong Kong, Kaohsiung (Taiwan), and Xingang (China). Deep-sea vessels travel at various speeds between 14 Kn/Hr and 20Kn/Hr. The 'great circle shipping route' to Asia from North America has well documented ocean currents and weather/wind patterns which allows for accurate estimates

| | Vancouver | Kitimat | Prince Rupert | Stewart | Los Angeles | Yokohama (Japan) | Hong Kong | Kaohsiung (Taiwan) | Xingang (China) |
|---|---|---|---|---|---|---|---|---|---|
| Vancouver | -- | 400 NM<br>1 Day | 477 NM<br>1.2 Days | 573 NM<br>1.5 Days | 991 NM<br>205 Days | 4,262 NM<br>11 Days | 5,763 NM<br>15 Days | 6,587 NM<br>17 Days | 7,578 NM<br>20 Days |
| Kitimat | 400 NM<br>1 Day | -- | 121 NM<br>7.5 Hrs | 264 NM<br>17 Hrs | 1,391 NM<br>3.5 Days | 3,941 NM<br>10 Days | 5,444 NM<br>14 Days | 6,187 NM<br>16 Days | 6,187 NM<br>16 Days |
| Prince Rupert | 477 NM<br>1.2 Days | 121 NM<br>7.5 Hrs | -- | 123 NM<br>10 Hrs | 1,432 NM<br>3.6 Days | 3, 810 NM<br>9.8 Days | 5,323 NM<br>13.7 Days | 6,110 NM<br>15.7 Days | 6,110 NM<br>15.7 Days |
| Stewart | 573 NM<br>1.5 Days | 264 NM<br>17 Hrs | 123 NM<br>10 Hrs | -- | 1,529 NM<br>4 Days | 3,896 NM<br>10.3 Days | 5,406 NM<br>14.1 Days | 5,155 NM<br>13.4 Days | 4,749 NM<br>12.5 Days |
| Los Angeles | 991 NM<br>2.5 Days | 1,391 NM<br>3.5 Days | 1,432 NM<br>3.6 Days | 1,529 NM<br>4 Days | -- | 4,839 NM<br>12.5 Days | 6,380 NM<br>18 Days | 7,578 NM<br>17 Days | 8,959 NM<br>20 Days |
| Yokohama (Japan) | 4,262 NM<br>11 Days | 3,941 NM<br>10 Days | 3,810 NM<br>9.8 Days | 3,896 NM<br>10.3 Days | 4,839 NM<br>12.5 Days | -- | 1,585 NM<br>4 Days | 1,335 NM<br>3.4 Days | 1,335 NM<br>3.4 Days |
| Hong Kong | 5,763 NM<br>15 Days | 5,444 NM<br>14 Days | 5,323 NM<br>13.7 Days | 5,406 NM<br>14.1 Days | 6,380 NM<br>18 Days | 1,585 NM<br>4 Days | -- | 290 NM<br>18 Hrs | 290 NM<br>18 Hrs |
| Kaohsiung Kang (Taiwan) | 6,587 NM<br>17 Days | 6,187 NM<br>16 Days | 6, 587 NM<br>17 Days | 5,155 NM<br>13.4 Days | 7,578 NM<br>20 Days | 1,335 NM<br>3.4 Days | 290 NM<br>18 Hrs | -- | 227 NM<br>14 Hrs |
| Xingang (China) | 7,578 NM<br>20 Days | 6,187 NM<br>16 Days | 6,587 NM<br>17 Days | 4,749 NM<br>12.5 Days | 8,959 NM<br>23 Days | 1, 335 NM<br>3.4 Days | 290 NM<br>18 Hrs | 227 NM<br>14 Hrs | -- |

*Data Source: United States Government. "Distances Between Ports" Prepared and published by the National Imagery and Mapping Agency, Bethesda, Maryland. Ninth Edition 1997.*Time/Speed/Distance Calculations at 16.1439 Kn/Hr*

## CUSTOM POINT OF ENTRY

| Canadian Border Services Agency | Vancouver International Airport |
|---|---|
| Type of Entry Point | Airport |
| Location | #113, 5000 Miller Road, Richmond BC, V7B 1K6 |

| Canadian Border Services Agency | Port Metro Vancouver |
|---|---|
| Type of Entry Point | Port |
| Location | 100 The Pointe, 999 Canada Place, Vancouver BC, V6C 3T4 |

| Canadian Border Services Agency | Kelowna |
|---|---|
| Type of Entry Point | Airport |
| Location | 15-5533 Airport Way, Kelowna BC, V1V 1S1, Tel: 1.800.461.9999 |

| Canadian Border Services Agency | Pacific Highway Border Crossing |
|---|---|
| Type of Entry Point | Highway 44 / Pacific Highway |
| Location | 28-176 Street, Surrey BC, V3S 9R9, Tel: 1.800.461.9999 |

| Canadian Border Services Agency | Prince Rupert |
|---|---|
| Type of Entry Point | Port |
| Location | 368-309 2nd Ave West Prince Rupert BC, V8J 3T1, Tel: 250.627.3003 |

# 12. UTILITIES

## WATER SYSTEM

According to its "Corporate Strategic Plan" the District of Lillooet's highest priority is "the continued supply of safe drinking water in Lillooet" Corporate Strategic Plan, 2007, p.6).

### CURRENT SYSTEM

The current Lillooet domestic water system draws from five main water sources. There are two creek intakes: Dickey Creek and Town Creek. Both are considered surface water.
There are also three well sources in the system: Rec Well and two wells at Conway. Conway well has been offline since September 2010 dues to unacceptable concentrations of arsenic.

These sources serve all the residential and commercial properties that are connected to the system.

Most houses in the District Municipality of Lillooet are connected to the domestic water system unless they are on the outskirts of the system in which case they have a private well system.

Not every home in the District Municipality is connected to the sewage system, however. Those homes not connected to the sewage system use a personal septic field. For the most part only central Lillooet is connected to a sewage system. Sewage from these homes is treated in Lillooet's sewage treatment facility/plant.

Treatment of domestic water: the only treatment method of Lillooet's domestic water is chlorination. When water passes through one of the 3 main intakes it is injected with chlorine on the way to the reservoir. All water goes through one of three reservoirs prior to entering the domestic system even during peak usage. The total capacity of the three water reservoirs is 1,830,000 gallons.

### NEW WATER PROJECT – Expected completion of August 2014

The existing system is not ideal. The two surface intakes that serve the existing water system are each subject to erosion material and organics as a result of large fires in their watersheds. And, in general, surface water is prone to unacceptably high turbidity levels. Consequently these sources fail to meet Interior Health Authority's requirements because all surface water is required to be treated by filtration and UV due to its susceptibility to high turbidity. So quality levels become a direct concern for two of our three operational intakes. The Rec Well provides safe water but is unable to meet current demands.

The New Water Project will face none of the issues of the current system. We will be able to provide a greater quantity of water of the highest quality for the long term. As such it will meet all of the IHA's requirements. The future system will have three main sources: two wells on the Seton Fan and one intake drawing from Seton Canal. The water collected by the Seton Fan ground wells will be filtered naturally through 60 feet of sand and gravel before being collected. All sources will pass through a treatment plant that applies UV treatment as well as filtration. Potential for expansion is built into the plan of the new water system. For

example the plant will have space for the addition of two more pumps beside the two operational pumps. Thus domestic water service could be supplied for the commercial, agricultural, and, industrial zoned areas in East Lillooet.

Part of the New Water Project is metering. Water Metering will have two main benefits. First of all it will allow the District to discover leaks within the domestic system and repair them. But the main purpose of metering is to increase conservation of water resources. Conservation due to water metering is expected to reduce overall usage by 30% to 40%. The benefits of such a reduction are wide ranging. Less water will be pumped and less water will be treated. This leads to a longer life span of those systems. Also if we decrease the amount of influent into the sewage treatment plant because people are using less water, then the life of that system is extended. Or that system will be able to support a greater number of houses. This can support infill whereby unoccupied lots within the grid can be brought online without requiring an upgrade to the sewage treatment plant.

We are also applying for grants for the waste water treatment plant project in order to upgrade the waste water treatment facility. The aim is to improve its performance and increase its functioning. The improvement of our storm systems is also a priority. The current storm system is old and needs to be upsized.

| Water System | |
|---|---|
| Available Current Capacity | 1,500-1,600 Gallons Per Minute (gpm) |
| Average Daily Demand | 1,500 Gallons Per Minute (gpm) |
| Peak Demand | 1,800 gpm |
| Residential Domestic Water annual user fee | $293 |
| Residential Sewage annual user fee | $293 |
| Water Connection Fee | $1500+ $200 inspection fee |
| Sewage Connection Fee | $1500 + $200 inspection fee |

*fees subject to revision

| Waste Water System | | |
|---|---|---|
| Secondary Treatment Plant | Type of treatment | |
| Headworks | Mechanical | removes floating solids |
| Primary treatment | Mechanical | Removes 20 - 30% of Biochemical Oxygen Demand (BOD) |
| Secondary Treatment Plant | Biological | removes 85% of Total Suspended Solids & BOD |

# TELECOMMUNICATIONS

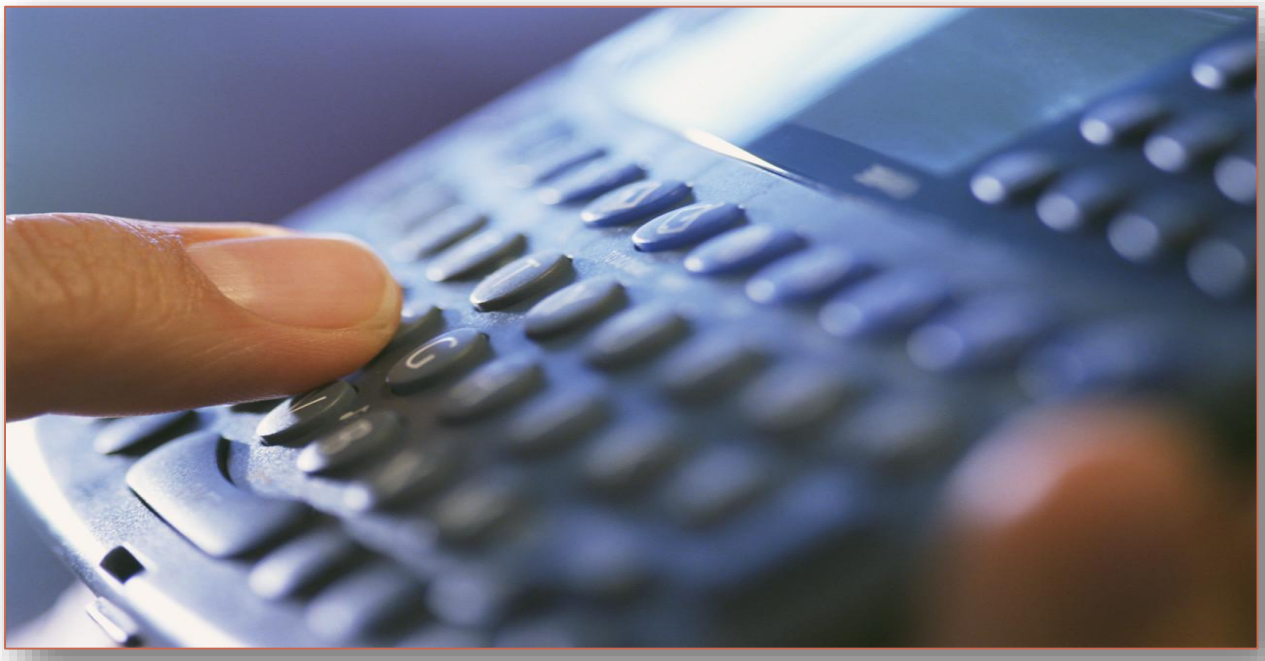
| Name of Provider | Telus |
|---|---|
| Addresses | |
| Head Office | 200 Consilium Place, Suite 1600 Scarborough, Ontario, Canada, M1H 3J3 |
| BC Regional Offices | 4535 Canada Way,Tower B, Burnaby, BC, Canada, V5G 1J9 |
| | 3500 Gilmore Way, Burnaby, BC, Canada, V5G 4W7 |
| Website | telus.com |
| Contact #s | |
| Canada toll-free | 1.866.558.2273 |
| Vancouver | 1.604.291.2355 |
| Service Characteristics of the Office | |
| ADSL Available | Yes |
| Switch Technology | Fed by a Diverse Fiber Network |
| Cellular Network Characteristics | |
| Network Type | HSPA |
| Network Speeds | up to 21Mbps |
| Footprint of Cell Net | 6 - 10 km Radius Circle from Centre of Town |

For rural areas high-speed internet services are available from Xplornet or Lyttonnet. Xplornet can provide wireless internet services via a digital dish system to anyone, anywhere.

*Data Source: xplornet.com*

Lyttonnet provides low cost High Speed Internet to the Fraser Canyon, near Lytton. Lyttonnet is continually expanding the coverage of its internet services. Currently its services extend throughout the Fraser Canyon from Lytton, North to the southern border of the District Municipality.

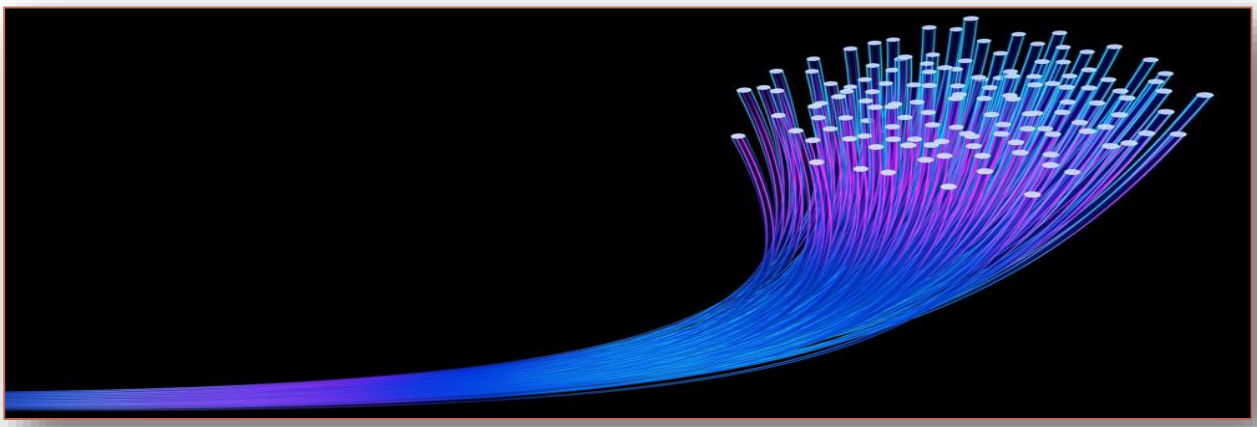
*Data Source: lyttonnet.com facebook.com/lyttonnet*



| Name of Provider | Shaw Cable Canada |
|---|---|
| Address | 909 Main Street, Lillooet, BC, V0K 1V0 |
| Website | shaw.ca |
| Contact # | |
| Sales and Technical Support | 1.866.574.3123 |
| Service Characteristics of the Office: | |
| Switch Technology | All switches are Cisco |
| Fiber Service Provided | Yes |
| Monitoring - Remotely or On-Site | Both |
| Network Characteristics | Satellite Fed for Television |
| | Microwave Fed for Broadband |
| Central Office on Self-Healing Fiber Ring | No, microwave link is very reliable and fully backed up. |
| Dual Feed from Two Separate Switching Offices | Not needed since office is point of origin of services |
| Multiple Route Diversity | Not needed since office is point of origin of services |

Shaw Cable Canada provides internet and television services to Lillooet. The internet system is a hybrid fiber coaxial system. It is capable of speeds of 25MhZ down 2MhZ up. Shaw is currently exploring rebuilding the backbone infrastructure to increase available bandwidth. When that is completed all of the Shaw lineup and digital services would be integrated into Shaw's full fibre backbone infrastructure and become fully fiber fed. This will enable expansion of Shaw's services to areas of the community not currently able to access their services. The electronics facility and cable system network are completely backed up. So in the event of a power outage Shaw can continue to provide internet service to those customers who have a backup electrical system for their network. The health of the entire network is monitored 24/7. Should an issue arise a local tech is contacted immediately. Should the local tech be unavailable supervisors of the system can dispatch techs from Chilliwack and Kamloops. Shaw service has proved to be very reliable in Lillooet with only one or two outages in the past five years.

When Shaw integrates its Lillooet operations into its full fiber network, there are no limits to the types of bandwidth intensive business operations that it can support. A company like Lucas Arts which is bandwidth intensive could operate within Lillooet. Shaw is also making the transition to all digital. This will increase the network capacity of the existing infrastructure in addition to supporting broadband 250 which is 250Mbps down and 50mbps up. This increase in bandwidth is made available simply through the shift to digital and is not contingent upon the planned fiber upgrade.



# LILLOOET SOLID WASTE MANAGEMENT FACILITY

| 405 Landfill Road, Lillooet, BC | | |
|---|---|---|
| Summer Hours (May 1 - Oct 1) | Mon, Wed, Fri | 2 PM - 6 PM |
| | Sun | 10 AM - 6 PM |
| Winter Hours (Oct 2 - April 30) | Mon, Wed, Fri | 12 PM - 4 PM |
| | Sun | 10 AM - 4 PM |
| Capacity remaining | 60 years | |

*Data Source: http://slrd.iwebez.com/siteengine/activepage.asp?PageID=61*

Some exciting projects are underway at the Lillooet Waste Management Facility. A weigh scale has been installed and operational training procedures are set to follow soon. Additionally, prior to daily operation, a bylaw amendment is required to change the volume based fee structure to a weight based fee structure. At the time of publishing, the SLRD is undergoing a regional composting feasibility study which will assess regional opportunities for the collection of organics. The study examines the contents of waste and the level of organics that could be captured from the household. The recycling centre opened in late 2010 and has been busy collecting and processing recyclables for the market since 2011. In partnership with Encorp Lillooet Solid Waste Management Facility handles electronics recycling. This includes computers, display devices, printer and fax machines to mention a few. In addition to normal refuse and recyclables, the Lillooet Sold Waste Management Facility (operated by the SLRD) now accepts flammable liquids, pesticides, and gasoline. Also accepted are paint products in consumer volumes. In addition to accepting paint, it can be exchanged free of charge on as-is basis, as-available basis.

| The materials listed below are accepted at the Lillooet Solid Waste Management Facility |
|---|
| Mixed Paper, Cardboard, Glass, Metals, Batteries, Paint. |
| Petroleum or Synthetic Oils, Crankcase Oil, Transmission Oil, Engine Oil, Hydraulic Fluid, Transformer Oil, Gear Oil, Antifreeze, Cooking Oils, Solvents, Paints. |
| Flammable Liquids, Pesticides, and Gasoline |
| Paint also accepted at Lillooet Glass and Tire: Lillooet Glass and Tire, 561 Main Street, Lillooet, BC |

Data Source: http://slrd.iwebez.com/files/%7B8F331308-58E2-4939-AADB-915BBDD85E5B%7DLillooet%20Recycling%20Brochure%202011.pdf

| Tipping Fees Schedule | | | |
|---|---|---|---|
| Waste type | | Participant | Non-Participant |
| A. | Putrescible Waste (per tonne) | $65.50 | $75.50 |
| B. | Putrescible Waste (per m3 uncompacted) | $6.50 | $7.50 |
| i. | Standard bag | $0.50 | $0.60 |
| ii. | Oversized bag | $0.75 | $1.00 |
| iii. | Pickup truck | $13.00 | $15.00 |
| iv. | Overfilled pickup | $19.50 | $22.50 |

| | | | |
|---|---|---|---|
| v. | Pickup with sideboards | $26.00 | $30.00 |
| Waste Type | | Participant | Non-Participant |
| vi. | 20 cubic yard rear load compactor truck | $597.00 | $636.00 |
| vii. | 18 cubic yard rear load municipal truck | $109.00 | n/a |
| viii. | 30 cubic yard roll-off compacted | $532.00 | $615.00 |
| ix. | 40 cubic yard roll-off compacted | $711.00 | $819.00 |
| C. | Non-putrescible Waste (per cubic metre) | $13.00 | $15.00 |
| i. | Gypsum board (per sheet) | $2.00 | $3.00 |
| ii. | Pickup truck | $26.00 | $30.00 |
| iii. | Overfilled pickup | $39.00 | $45.00 |
| iv. | Pickup with sideboards | $52.00 | $60.00 |
| v. | Tandem truck | $131.00 | $151.00 |
| vi. | 30 cubic yard roll-off container | $301.00 | $347.00 |
| vii. | 40 cubic yard roll-off container | $402.00 | $464.00 |
| viii. | Asbestos* (per cubic metre) | $109.00 | $129.00 |
| ix. | Clean fill | $6.00 | $6.00 |
| D. | Specific Wastes | | |
| i. | Love seat or full size couch | $5.50 | $6.50 |
| ii. | Single couch chair | $2.75 | $3.25 |
| iii. | Mattresses | $3.25 | $3.75 |
| iv. | Animal carcasses (larger than a domestic dog or cat) | $25.00 | $30.00 |
| v. | Animal carcasses (smaller than a domestic dog or cat) | $5.00 | $5.85 |
| vi. | Rubber tire <16” diameter* | $1.00 | $1.25 |
| vii. | Rubber tire >16” diameter* and <25” diameter* | $5.00 | $6.00 |
| viii | Oversize tires | Banned | Banned |
| E. | Metal | | |
| i. | Air conditioners | $14.00 | $16.50 |
| ii. | Refrigerators and freezers | $18.00 | $21.00 |
| iii. | Stoves | $8.00 | $9.50 |
| iv. | Microwaves | $2.00 | $2.50 |
| v. | Water heaters | $5.00 | $6.00 |
| vi. | Pickup load of bulk metal | $5.00 | $6.00 |
| vii. | Tandem truck of bulk metal | $50.00 | $58.50 |
| viii. | Automobile hulks, engines | Banned | Banned |
| F. | Wastes with Toxic Residue* | | |
| i. | Un-compacted containers (per cubic metre) | $15.00 | $18.00 |
| ii. | Preserved wood (per cubic metre) | $12.00 | $14.00 |
| iii. | Dry sludge (per cubic metre) | $7.50 | $8.50 |

| The following conditions apply to Tipping Fees outlined above |
| --- |
| 1. Notwithstanding the rates set out in section 1, the minimum rate charged for deposit of refuse shall be $2.00, except as provided in section 15. |
| 2. A rate of $65.50 per metric tonne will be charged for refuse which originates within the taxing area (participant). A rate of $75.50 per tonne will be charged for refuse which originates outside the taxing area (non-participant). |
| 3. The fees specified below will be doubled if the refuse is not disposed of as directed by the attendant or as specified on signage. |
| 4. A minimum fee of $50.00 or 10 times the appropriate tipping fee, whichever is greater, will be charged for waste deposited outside the gate or during hours when the landfill is closed to the public. |
| 5. The attendant requires written approval from the SLRD before allowing the disposal of material containing asbestos. |
| 6. For quantities of refuse containing toxic residue the attendant requires written consent from the SLRD prior to disposal. |
| 7. Refuse not specified in the following schedule will be charged at the regular non-putrescible rate of $12 per cubic metre. |
| 8. The attendant is authorized to refuse the disposal of loads of refuse. |
| 9. Fees will not be charged for lead-acid batteries, glass, tin/aluminium cans, yard waste, free wood, or reusables. |
| 10. Tires containing rims will be charged an additional fee of $5.00. |
| 11. Special Wastes: and anatomical, pathological, and untreated biomedical waste as specified by Provincial regulations, liquid, semi-solids, oils, paints, glues, and solvents are banned. |
| 12. All roll-offs and compactor trucks must be weighed at the SLRD designated scale facility. If the scale is non-operational then the rates as listed herein for the applicable vehicle will be charged. |

*Data Source: http://slrd.iwebez.com/siteengine/activepage.asp?PageID=70*

# ELECTRIC POWER

| | |
|---|---|
| Provider: BC Hydro | bchydro.com |
| Enquiries to Hook Up New Property | 1.877.520.1355 |
| Enquiries About Existing Properties Already Hooked Up | 1.800.224.9376 |
| Net Importer/Exporter of Power: | Net Exporter—BC Hydro generates between 43,000 and 54,000 GWH of electricity annually |
| % of Reserve Margin Including Generation and Net Purchases | 8% as per WSCC guidelines plus an additional 8% surplus |
| Average Electrical Service Availability Index: | |
| ▪ Most Recent Year | 99.940 |
| ▪ Last 5 Years | 99.9314 |
| Name of Power Pool Membership | Formal membership in WSCC, WSPP, Power Pool of Alberta (PPA), MAPP. Also active in SPP and CalPX |
| Source Electric Power Deregulated | Wholesale competition allowed |
| Residential Customers | 6.80 cents per kWh for the first 1,350kWh they use of a two-month billing period. Above that amount, customers pay 10.19 cents per kWh for the balance of the electricity used during the billing period. |

| Business Customers: | Average Cost Per kWh |
|---|---|
| *Small General Service Rate:* | *Annual peak demand less than 35kWh* |
| ▪ Basic Charge | 19.25 cents per day |
| ▪ All kWh | $0.0915 per kWh |
| ▪ Minimum Charge | The basic charge |
| ▪ Rate Rider | 5% Rate Rider applied to all charges, before taxes and levies |
| *Medium General Service Conservation Rate:* | *Annual peak demand between 85 and 150 kW* |
| ▪ Basic Charge | 19.25 cents per day |
| ▪ Demand Charge | $0.00 per kW for first 35 kW |
| | $4.69 per kW for next 115kW |
| | $9.00 per kW for remaining kW |
| ▪ Energy Charge | Part 1:<br>First 14,800 kWh $0.0897 per kWh. All additional kWh $0.0490 per kWh up to baseline<br>Part 2:<br>$0.0942 per kWh for usage up to 20% above baseline<br>$0.0942 per kWh for savings down to 20% below baseline (credit)<br>Usage or savings beyond 20% of baseline are based on Part 1 prices |

*Data Source: Fortis BC – "Rate Schedules" – fortisbc.com*

| | |
|---|---|
| ▪ Discounts | 1.5% on entire bill if customer's electricity is metered at primary potential.<br>$0.25 per kW if customer supplies transformation from a primary to secondary potential.<br>If a customer is entitled to both discounts the 1.5% discount is applied first |
| ▪ Minimum Charge | 50% of the highest maximum demand charge billed in any month within an on-peak period (1 November to 31 March inclusive) during the preceding 11 months. |
| ▪ Rate Rider | 5% Rate Rider applied to all charges, before taxes and levies |
| *Medium General Service Interim Rate:* | *Annual peak demand between 35 and 150 kW. MGS accounts are moving from the MGS Interim Rate to the new MGS Conservation Rate which better encourages conservation* |
| ▪ Basic Charge | $0.1925 per day |
| ▪ Demand Charge | $0.00 per kW for first 35 kW<br>$4.69 per kW for next 115 k W<br>$9.00 per kW for remaining kW |
| ▪ Energy Charge | $0.0897 per kWh for last 14,800 kWh<br>$0.0490 per kWh for remaining kWh |
| ▪ Discounts | 1.5% on entire bill if customer's electricity is metered at primary potential.<br>$0.25 per kW if customer supplies transformation from a primary to a secondary potential.<br>If a customer is entitled to both discounts the 1.5% discount is applied first. |
| ▪ Monthly Minimum Charge | 50% of the highest maximum demand charge billed in any month within an on-peak period (1 November to 31 March inclusive) during the preceding 11 months. |
| ▪ Minimum Energy Charge | $0.0281 per kWh applies when the Energy Charge (part 1 and 2) divided by the total kWh is less than $0.0281 per kWh |
| ▪ Rate Rider | 5% Rate Rider applied to all charges, before taxes and levies |
| *Large General Service Conservation Rate:* | *Annual peak demands equal to or greater than 150 kW or total annual energy usage of at least 550,000kWh.* |
| ▪ Basic Charge | $0.1925 per day |
| ▪ Demand Charge | $0.00 per kW for the first 35 kW<br>$4.69 PER Kw for next 115 kW<br>$9.00 per kW for remaining kW |
| ▪ Energy Charge | Part 1:<br>$0.0937 per kWh for first 14,800 kWh<br>$0.0451 per kWh for remaining kWh up to baseline |

# 13. GOVERNMENT

## Municipal Government

| | |
|---|---|
| | Part 2:<br>$0.0942 per kWh for usage up to 20% above baseline<br>$0.0942 per kWh for savings down to 20% below baseline (credit)<br>Usage or savings beyond 20% of baseline are based on Part 1 prices |
| ▪ Discounts | 1.5% on entire bill if customer's electricity is metered at primary potential.<br>$0.25 per kW if customer supplies transformation from a primary to a secondary potential.<br>If a customer is entitled to both discounts the 1.5% discount is applied first. |
| ▪ Monthly Minimum Charge | 50% of the highest maximum demand charge billed in any month within an on-peak period (1 November to 31 March inclusive) during the preceding 11 months |
| ▪ Minimum Energy Charge | $0.0281 per kWh applies when the Energy Charge (Part 1 and 2) divided by the total kWh is less than $0.0281 per kWh |
| ▪ Rate Rider | 5% Rate Rider applied to all charges, before taxes and levies |
| Industrial: Transmission Service: | Mines, chemical plants, large sawmills, pulp and paper mills, large manufacturing |
| ▪ Demand Charge | $6.263 per kVa of billing demand |
| ▪ Energy Charge | $0.03261 per kWh applied to all kWh up to and including 90% of the customers baseline load (CBL) in each billing year.<br>$0.07360 per kWh applied to all kWh above 90% of the CBL in each billing year. |
| ▪ Minimum Charge | $6.027 per KVa of billing demand per billing period |
| ▪ Rate Rider | 5% Rate Rider applied to all charges, before taxes and levies. |

| | |
|---|---|
| Form (Structure) | Mayor and Council |
| Number of Elected Officials | 5 (1 Mayor & 4 Councillors) |
| Mayor | Dennis R. Bontron |
| Length of Term | 3 years |
| Next Election Date | Nov 2014 |
| contact info | council@lillooetbc.ca |

| | |
|---|---|
| St`at`imc Chiefs Council (SCC) | |
| Form (Structure) | Consists of political representatives from the 11 communities in St'at'imc Nation |
| Number of Elected Officials | 11 (Each community has a seat at the St'at'imc SCC table) |
| Tribal Chair (spokesperson for council) | elected by fellow chiefs |
| Length of Term | Not Standard. Varies by community |

| | |
|---|---|
| Next election Date | varies by community |
| Function | focuses of exercising St'at'imc title in off-reserve issues |
| contact info | Tribal Chief Garry John - 250.256.7523 |

| Squamish Lillooet Regional District | | notes |
|---|---|---|
| Form (Structure) | Chair and Board | |
| Number of Elected Directors | Four (one from each of the four electoral districts in the SLRD) | hold office for 3 years |
| Number of Appointed Directors | Five (one each from Whistler, Lillooet, Pemberton, two from Squamish) | hold office for 3 years/ appointed by each municipal government in SLRD |
| Total | 9 Directors | |
| Chair | Susan Gimse | Chair is elected from Board of Directors annually |
| Next Election Date | Nov 2014 | |

| SLRD Contact Info | |
|---|---|
| Squamish - Lillooet Regional District | |
| PO Box 219, 1350 Aster Street | |
| Pemberton. BC | |
| V0N 2L0 | |
| Phone | 604.894.6371 |
| Toll Free | 1.800.298.7753 Ext. 0 |
| Fax | 604.894.6526 |

| Electoral Area A (Gold Bridge, Bralorne, and Area) | |
|---|---|
| Population (2011) Census | 224 |
| Population (2006 Census) | 207 |
| Services (include but are not limited to) | Planning, Building Inspection, Bralorne Fire Protection |
| Contact Info | |
| Director Debra Demare | |
| Phone | 250.398.0815 |
| Email | demare87@gmail.com |
| Alternate Teri Anderson | |
| Phone | 250.238.2675 |
| Email | terianderson@gmail.com |

*Data Source: http://www.slrd.bc.ca/siteengine/activepage.asp?PageID=126*

| Electoral Area B (Yalakom, Bridge River, Seton/Shalath, Texas Creek, Fountain Valley, Pavillion, Duffey Lake) | | |
|---|---|---|
| Population (2011 Census) | 359 (excluding Indian Reserves) | 1835 (Including Indian Reserves) |
| Population (2006 Census) | 575 | 1719 |

| | (excluding Indian Reserves) (including Indian Reserves) |
|---|---|
| Services (include but are not limited to) | Planning, Building Inspection, Lillooet A/B Rescue Service |
| Contact Info | |
| Director Mickey Macri | |
| Phone | 250.256.4560 |
| Email | mic88@telus.net |
| Alternate Dennis DeYagher | |
| Phone | 250.259.8268 |
| Email | deyagher@yahoo.com |
| Lillooet Appointed Director | Kevin Anderson |

*Data Source: http://www.slrd.bc.ca/siteengine/activepage.asp?PageID=127*

| Provincial | |
|---|---|
| Government of British Columbia | |
| Form (Structure) | British Parliamentary |
| Number of Elected Officials | 85 |
| How Often Does Legislature Convene | Varies |

| Premier | |
|---|---|
| Name | Premier Christy Clark |
| Affiliation | British Columbia Liberal Party |
| Year Elected | May 2011 |
| Current Term Expiration | 2 years |
| Allowed to Run for Another Term | Yes |
| Next Election Date | May 2013 |

| Provincial government representation | |
|---|---|
| Name of Member of Legislative Assembly (MLA) | Harry Lali |
| Total Members of Legislative Assembly | 1 |
| Electoral District | Fraser Nicola (includes, but is not limited to: Lillooet, Logan Lake, Merritt, Ashcroft, Clinton) |
| Party Affiliation | New Democratic Party of BC |
| Next Election Date | May 2013 |

| Federal | |
|---|---|
| Name | Prime Minister Stephen Harper |
| Affiliation | Conservative Party of Canada |
| Year Elected | May 2011 |
| Current Term Expiration | 2015 |
| Allowed to Run for Another Term | Yes |
| Next Election Date | Monday, October 19, 2015 |

| Federal government representation | |
|---|---|
| Name of Member of Parliament (MP) | Mark Strahl |

| | |
|---|---|
| Electoral District | Chilliwack - Fraser Canyon |
| Party Affiliation | Conservative Party of Canada |
| Next Election Date | Monday, October 19, 2015 |
| Contact Info | |
| Phone | 250.256.2677<br>1.800.667.2808 (Toll-Free) |
| Fax | 250.256.2678 |

| Senators | |
|---|---|
| No. of Appointed Officials | 105 appointed by Governor General and Prime Minister |
| | Senators are appointed until the age of 75 |

| Cayoose Creek Band – SEKW'EL'WAS | |
|---|---|
| PO Box 484, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.4136 |
| Fax | 250.256.4138 |
| Chief | Michelle Edwards |
| Councillors | Perry Redan, Lisa LaRochelle, Shirley LaRochelle, |
| Administrator | Trish Edwards |
| E-mail | cayoosecreekband@yahoo.com |

| Bridge River Indian Band - XWISTEN | |
|---|---|
| PO Box 190, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.7423 |
| Fax | 250.256.7999 |
| Chief | Saul Terry |

| | |
|---|---|
| Councillors | Gary Forsythe, Brenda Frank, Gerald Michel, Harold James |
| Administrator | Bradley Jack |
| E-mail | xwisten@uniserve.com |
| Website | xwisten.ca |

| T'IT'Q'ET First Nation | |
|---|---|
| PO Box 615, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.4118 |
| Fax | 250.256.4544 |
| Community Chief | Kevin Whitney |
| Tribal Chief | Shelly Leech |
| Councillors | Marilyn Napoleon, Robert Leech, George Napoleon, Dean Billy |
| Administrator | Wendy Phair |
| E-mail | reception@titqet.org |

| Pavilion Indian Band - TS'KW'AYLAXW | |
|---|---|
| PO Box 2200, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.4204 |
| Fax | 250.256.4058 |
| Political Chief | Robert Shintah |
| Councillors | Katrina McDonald, Carrie Bob, Justin Kane, Dennis Ned |
| E-mail | reception@tskwalaxw |

| Fountain Band - XAXL'IP | |
|---|---|
| PO Box 1330, Lillooet, BC, V0K 1V0 | |
| Phone | 250.256.4800 |
| Fax | 250.256.4803 |
| Chief | Arthur Adolph |
| Councillors | Howard Bob, Isaac Adolph, Jeff Saul, Pauline Michell, Valerie Diablo |
| E-mail | reception@xaxlip.ca |

| Seton Lake Band - CHALATH | |
|---|---|
| | |
| Phone | 250.259.8227 |
| | |
| Fax | 250.259.8384 |

| | |
|---|---|
| Chief | Garry John |
| Councillors | Ida Mary Peter, Phyllis Peters, Cliff Casper, Gil Shield, Rod Louie |
| Acting Administrator | Crystal Branget |
| E-mail | cbranget@gmail.com |

# 14. HOUSING[2]

## THE LAND BASE

The District of Lillooet has a total land area of 27.18 square kilometres. It is geographically divided into four areas – Central Lillooet, North Lillooet, South Lillooet, and East Lillooet, located across the Fraser.

There are 1,052 properties in Central and South Lillooet. Ten of those are zoned agricultural, 107 are zoned Commercial 1, 41 are zoned Commercial 2 and 3, 93 are zoned Industrial, 17 are zoned Public Use and 784 are zoned Residential, including 331 zoned Residential 1 and 322 zoned Residential 2.

Central Lillooet has 772 lots with the ability to be hooked up to the water system and 535 that can be hooked up to the water system and the sewer system. Those numbers do not include municipal or government properties such as the hospital or schools.

North Lillooet has 22 Commercial properties, one Industrial property, two properties zoned Public Use, six zoned Rural Resource 1, and 223 residential properties. 148 of the properties in North Lillooet are zoned Residential 1. North Lillooet has 227 lots that can be hooked up to the water system.

In East Lillooet, there are five properties with Commercial zoning, two with Industrial, and 196 properties with Residential or Rural Residential zoning. 108 of the properties in East Lillooet have Rural Residential zoning.

## THE MARKET

Lillooet has a lot to offer in terms of real estate. The climate, the scenery, and the amenities we have in town, particularly medical facilities, are very strong. A key factor in attracting newcomers to Lillooet is the community's lower-priced real estate market. Low prices make it possible for younger families moving here to be 'mortgage free' or close to it in short order. And people living in places with booming real estate markets can either retire early here or afford to hold a second piece of real estate as they contemplate retirement. The market here can serve other needs as well. "Families are choosing to live here while one parent commutes to Vancouver on a weekly or bi-monthly basis. They can't afford to live down there, so they share rent or stay with family in Vancouver while owning a home here in Lillooet" says a local realtor.

Also, there is a wide range of affordable properties available. There are four or five distinct areas in town that give you a kind of selection of lifestyle possibilities. The VLA is a quiet residential neighbourhood with small lots and one road in. The Heights offers a broader range of properties (from trailers to large homes) but is essentially residential. The Hop Farm is a semi-rural area with small acreages and offers a variety of property options from older and affordable trailers to large new built homes. Being semi-rural provides its residents with the option of hobby farming and keeping horses or chickens. The Conway area is more residential

[2] This section uses portions of Wendy Fraser's "Advantage Lillooet: The Land, The Communities,The Opportunities"

than the Hop Farm but has larger lots than the VLA allowing for small orchards and gardens. So Lillooet can accommodate all sorts of different needs.

Properties outside of town also have a lot to offer. Rural properties range in size from 3 to 150 acres and they support a wide range activities including farming. These areas have the added advantage of being relatively close to the town. Currently there is quite an opportunity to get good value. While economic circumstances have affected the local real estate market, the geography, climate, scenery, and natural beauty of Lillooet have not changed. It is this natural capital that will continue to draw people to this community. Properties available now are very reasonably priced. And ultimately these properties will increase in value. We will see another real estate boom in Lillooet. So right now is a good time to invest in property in Lillooet. A realtor can ensure that you invest wisely and are well-informed.

## REAL ESTATE STATISTICS

| Household Affordability | Lillooet | B.C. |
|---|---|---|
| Median after-tax income (2005) | $45,620 | $46,472 |
| Average value of owner occupied, non-farm, non-reserve dwelling | $167,678 | $418,703 |
| Average major payments | $701 | $1,059 |

| Selected Occupied Private Dwelling Characteristics | |
|---|---|
| Total private dwellings | 985 (987 2011/BC assessment) |
| Number of owned dwellings | 759 |
| number of rented dwellings | 217 |
| Number of dwellings constructed before 1986 | 790 |
| Number of dwellings constructed between 1986 & 2006 | 200 |

| Average Residential Home Prices (under 10 acres, w/in DM) | |
|---|---|
| 2003 | $87,000.00 |
| 2004 | $114,000.00 |
| 2005 | $120,000.00 |
| 2006 | $138,000.00 |
| 2007 | $187,000.00 |
| 2008 | $173,585.00 |
| 2009 | $225,310.00 |
| 2010 | $177,169.00 |
| 2011 | $147,424.00 |

| Volume of Residential Sales (for all residential properties w/in DM) | |
|---|---|
| 2003 | 22.00 |
| 2004 | 28.00 |
| 2005 | 60.00 |
| 2006 | 63.00 |

| | |
|---|---|
| 2007 | 73.00 |
| 2008 | 62.00 |
| 2009 | 45.00 |
| 2010 | 35.00 |
| 2011 | 32.00 |

*Data Source: Kamloops & District R.E.A.*

| Average Sale Price (of vacant land w/in DM) | |
|---|---|
| 2003 | $32,000.00 |
| 2004 | $32,000.00 |
| 2005 | $75,000.00 |
| 2006 | $86,000.00 |
| 2007 | $47,000.00 |
| 2008 | $153,500.00 |
| 2009 | $74,185.00 |
| 2010 | $56,750.00 |
| 2011 | $30,667.00 |

| Volume of Vacant Lot Sales (for all properties w/out structures w/in DM) | |
|---|---|
| 2003 | 6.00 |
| 2004 | 0.00 |
| 2005 | 11.00 |
| 2006 | 7.00 |
| 2007 | 43.00 |
| 2008 | 4.00 |
| 2009 | 14.00 |
| 2010 | 10.00 |
| 2011 | 6.00 |

*Data Source: Kamloops & District R.E.A.*

## LOCAL REALTORS

| Bailey Stone, Sutton Realty | |
|---|---|
| 600 Blk. Main St. Lillooet, British Columbia, V0K 1V0 | |
| Office Phone | 250.256.0030 |
| Fax | 866.203.5260 |
| Bailey Stone | Realtor, Managing Broker |
| Cell | 250.256.9085 |

| | |
|---|---|
| E-mail | bstone@kadrea.com |
| lillooetrealestatesales.com | |

| Remax Lillooet | |
|---|---|
| 909 Main St. Lillooet, British Columbia, V0K 1V0 | |
| Office Phone | 250.256.7166 |
| Fax | 250.256.7126 |
| Chris Graham | Realtor, Managing Broker |
| Cell | 250.256.1537 |
| E-mail | chris@remaxlillooet.com |
| Mark Rawson | Realtor, Associate Broker |
| Cell | 250-256-1898 |
| E-mail | mark@remaxlillooet.com |
| remaxlillooet.com | |

# 15. ECONOMIC DEVELOPMENT

## LEADERSHIP'S COMMITTMENT TO ECONOMIC DEVELOPMENT[3]

The municipality's "Official Community Plan", the "Economic Opportunities Plan" presented to Premier Gordon Campbell, and the "2007-2017 Corporate Strategic Plan" identify a series of policies and strategies designed to support and enhance economic development for Lillooet. The benefits of this type of long-term planning include:

-integrity of the working land base
-direct investment to commercial centres
-building on existing assets and infrastructure
-taxes shared more equally
-vibrant, mixed use neighbourhoods
-certainty for developers

### COMMERCIAL STRATEGIES

Commercial strategies to support development include:

1. Land Use Designation changes including:
   -enhancing Downtown Square as a community focal point providing a mix of social, heritage, cultural, commercial, and passive recreation activities; seeking partners to assist with project development.
   -changing Main Street zoning north of 7th Ave. from Light Industrial to Commercial Mixed Use.
   -encouraging multi-family use as a priority use for the Main Street area south of the Mile O cairn, with commercial uses supported on the ground-floor only

2. Tax incentives to create a specified area on Main Street from Station Hill to Phair Road and in the East Lillooet Industrial Park. In this specified area, the municipality would provide tax relief for up to five years on increases to assessed values arising from improvements such as:
   -upgrades to building exteriors
   -additional commercial floor space
   -new residential units

3. Development Permit guidelines: The OCP says the District will support existing Development Permit guidelines that work to establish a general pre-1910 theme for renovations and construction of new buildings. Acceptable design themes are:
   -authentic renovation or restoration of original design themes, including Old Gold Rush, traditional First Nations, "Turn of the Century" Victorian or western
   -new or modern pre-1910 design themes including the above architectural values.

[3] This section uses portions of Wendy Fraser's "Advantage Lillooet: The Land, The Communities,The Opportunities"

## INDUSTRIAL STRATEGIES

OCP industrial strategies include several new opportunities:

-potential development of the North Lillooet upper bench area to include a 20 ha. industrial area and a 50 ha. residential area.

-development of the East Lillooet Airport lands, including a 120 ha. industrial area and a 380 ha. residential area.

-encouraging agriculture processing facilities on ALR lands in East Lillooet.

-possible relocation of all highway maintenance activities to East Lillooet.

-amending zoning from Commercial to Light Industrial in East Lillooet in the vicinity of Highway 99 North and Nugget Road to focus commercial development in downtown Lillooet

-amending industrial designation to residential to encourage site redevelopment for multi-family or resort development near the Old Bridge area. This initiative, along with the Main Street expansion, does present one challenge – it will decrease the industrial land inventory

## HOUSING STRATEGIES

The OCP recognizes that a community housing rehabilitation strategy is required to address the 30 per cent of housing that is worth less than $50,000.

It has also been recommended that the OCP should designate more multi-family suites to encourage new developments.

The District's Corporate Strategic Plan 2007-2017 notes there is under-utilized land in Lillooet belonging to School District 74, controlled by provincial ministries, currently leased by CN Rail or Crown land in and around the district. "Our control of these lands will create the ability to deal with seniors housing issues and affordable housing" (p.23).

# ECONOMIC SECTORS[4]

## TOURISM – GUARANTEED RUGGED

"Lillooet as a community working together will be a four-season visitor destination known for its culture and outdoor recreation experiences."

Tourism has been correctly identified as a key potential economic driver in Lillooet. To that end, in its "Economic Opportunities Plan", Lillooet is committed to pursuing "economic development strategic planning, tourism strategic planning and implementation, and recreation master planning." In order to achieve these goals, Lillooet has expressed a commitment to

[4] This section uses portions of Wendy Fraser's "Advantage Lillooet: The Land, The Communities,The Opportunities"

retain an Economic Development Officer for the foreseeable future (Economic opportunities plan, Sept. 2006, p.10).

Lillooet has the potential to be a world-class tourist region. This is due to a number of factors. Lillooet's climate is ideal for year-round tourist opportunities. "The warm, dry climate, hot summers and mild winters and low precipitation give Lillooet the potential for a longer tourism season with extended spring and fall seasons to support a variety of tourism activities" (p.16). "Lillooet has the foremost canyon landscape in Canada. The Fraser River is one of the largest free-flowing rivers left in the world." The varied topography ranges from rainforests on Highway 99 to desert landscapes, and from ponderosa pine and bunch grass coniferous forests to alpine meadows and towering snow-capped peaks and glaciers" (p.17).

Another opportunity for developing Lillooet as a tourist destination resides in the rich culture of the local First Nations communities. The St`at`imc have preserved many of their traditional ways and have begun sharing them with visitors through an emergent cultural tourism industry. Also Lillooet and area is home to significant and accessible cultural heritage sites. Opportunities to interpret and develop First Nations culture and heritage are virtually untapped (tourism development plan, 2008, p.7). Yet within the First Nations communities there is interest in developing a cultural tourism product in the area. The success of this industry hinges on successfully marketing it outside of the immediate area. The District of Lillooet is committed to working with First Nations communities in order to develop tourism ventures. This is expressed in Goal #3 of Lillooet's "Economic Opportunities Plan" which states that Lillooet will "support tourism development and business development partnerships or joint ventures" through Aboriginal partnerships. First Nations have greatly increased their participation in tourism initiatives over the years.

In addition to tourists coming to enjoy the landscape and learn about the local First Nations' culture, nature based-visitors come to Lillooet to see a diverse range of wildlife including "grizzly bear, California bighorn sheep, mountain goats, deer, and a wide variety of bird life." (p.17 Wendy)

Lillooet also has tremendous potential to serve as an eco-tourist hot spot. The rugged terrain supports every variety of outdoor activity such as camping, hiking, boating, canoeing, kayaking, fishing, rafting, mountain biking, and horseback riding. During winter Lillooet terrain provides for skiing/snowboarding, snowmobiling, ice-fishing, ice climbing and more.

Agri-tourism also has great potential in Lillooet. Ranching, tree fruits, organic farms, and other agriculture enterprises are ripe for the creation of more agri-tourism in Lillooet. A recent example of success in agri-tourism is Fort Berens Estate Winery. Fort Berens offers wine tasting, tours of the vineyard, and is expanding into other agri-tourism ventures.

Recent analyses have shown that the number of visitors to Lillooet has increased significantly since 2000 (Economic Base Analysis p.23). There was an increase in visitors by 50% between 2004 and 2007 (Tourism Development Plan 2008 p.4). That increase has seen a corresponding increase in total spending by visitors (p.25). The recent "District of Lillooet: Value of Tourism Study" generated visitor spending information for Lillooet. The model used to generate this data "provides an estimate of direct visitor spending only and does not estimate the economic impact (GDP, employment, etc.) of tourism within a community" (p.8). The study showed that annual direct visitor expenditures for the year 2009 were approximately CDN $5,740,000. For further details of the study such as estimates of visitor numbers by

accommodation type, please consult the village's website: lillooetbc.ca and search for "District of Lillooet Value of Tourism Study."

Nature-based tourism is the fastest growing sector of the overall tourism economy. The following potential outdoor activities can support tourism in Lillooet:

Winter:
Cross country skiing
Snowmobile touring
Winter camping
Sleigh rides
Skating
Ice climbing in the Marble Canyon, Seton Lake, and Bridge River areas
Ice fishing
Snowshoeing
Birdwatching

Summer:
Fishing
Sturgeon fishing
Golf
Multi-day Fraser River rafting trips
St`at`imc cultural/heritage tours
Sustainability tours that demonstrate how to live off the land
Mountain climbing
Horseback riding
Jet boat tours
4x4 tours linked with Whistler
ATV tours
Heli-hiking and helicopter tours. Scenic hiking areas on the ridges above Lillooet area a two-minute flight away
Walking and hiking tours
Photography tours
Geo-caching expeditions
Expanded garden tours
Rappelling
Multi-day rafting trips on the Fraser
One-day, brigade-style canoe trips combining Simon Fraser's explorations in 1808, aboriginal cultural sites and Gold Rush history
Mountain biking in Duffey Lake area
Wine Industry
Night Skies tours bringing people to Lillooet to enjoy the spectacle of the area's starry nights.
Birdwatching
Canoe/kayak tours on the placid stretch of the Fraser River between Lillooet and lytton
ElderHostel programs for older visitors

Lillooet should also be mindful of the long-term implications of the agreement Canada has negotiated with China for approved destination status. Up to 200 million Chinese citizens will be travelling abroad by 2020, and Canada is poised on the Pacific Rim to welcome millions of Chinese tourists.

With its Jade Monuments project and history of Chinese gold miners, Lillooet should consider how it can appeal to this new market. The jade project and the historical links to China can be promoted to give Lillooet a competitive advantage over similar BC communities trying to attract visitors from this new market.

There is one caveat: While the international market is attractive, negative experiences can have far-reaching consequences. Tourism studies advise that international visitors should be targeted only when their destination has top-notch facilities, and high-quality amenities and levels of customer service.

There was consensus among people interviewed for Wendy Fraser's "Advantage Lillooet: The Land, The Communities, The Opportunities" that Lillooet needs a hotel with a restaurant and a pool to attract overnight visitors and keep them in the community for longer stays. In the longer term, many people would also like to see a destination resort in the immediate area.

Rick Careless in his "Lillooet-Lytton Tourism Diversification Project" (found at http://www.spacesfornature.org/docs/Lillooet-Lytton_Report.pdf), identified the community's greatest need as the "development of a destination resort that would be an economic anchor" and function as a "magnet" to allow new businesses to grow and attract visitors. Ideally, Careless says, the resort should be a year-round operation that would combine a ski resort and golf course.

In his study, Careless stated that Lillooet's climate, dramatic setting, and proximity to Vancouver and the Okanagan, make it a feasible location for developing a destination 18-hole golf resort. A couple of possible locations have been identified—the Kamenka property, located within the District of Lillooet's boundaries in East Lillooet, and the current golf course nine kilometres south of town in Texas Creek Road.

Careless concluded that the Kamenka property is an attractive prospect, given its size (more than 1000 acres), its mountain setting, its location adjacent to the airport for easy fly-in use, its zoning, the fact that it is not within the ALR and the possibility of incorporating a large real-estate development (up to 74 large lots could be subdivided as part of the property). Similar real estate developments are key components of many of today's destination resorts and are used to help finance the developments.

Careless also notes the potential that exists in the Lillooet area to develop a number of ecolodges. These would be smaller-scale facilities, accommodating up to 40 guests, and would offer a high-calibre experience for seasoned ecotourism and adventure travellers. To succeed, such lodges would have to be linked with a range of products, including trail riding, heli-skiing, mountain bike touring, nature viewing, cultural tourism, etc. This in turn could lead to the development of other tourism related businesses, including new restaurants and retail stores.

Market research indicates that the aboriginal tourism industry has significant potential for growth in BC. Current aboriginal tourism activities include Xwisten's tour to its traditional fishing rocks; spawning channel tours at Sekw'el'was; dramatic performances and traditional feasts at T'it'q'et; and boat tours offered by Tsal'alh. Grand Chief Terry, who is chief at Xwisten,

described the tours of the fishing rocks as “a small operation now, but it’s the beginning of something… I don’t know that we’re ready for tourism, but tourism is slowly sneaking up on us.”

## MINING

Since 2001, provincial government policies and increased commodity prices have fuelled investor confidence in the mining industry, and mining revenues and jobs in B.C. are increasing.

The Lillooet area has historically been a hub of mining activity in the province. Bralone Gold Mines is re-developing the historic Bralorne, King and Pioneer Gold Mines in the Bridge River Valley, west of Lillooet. Together these three operations represent the largest historic gold producer in the Canadian Cordillera. From 1928 to 1971, these three operations produced 4.15 million ounces of gold from 7.9 million tons of ore (equalling a grade of 0.53 ounces per ton). At today’s gold prices this production would be worth more than $7 billion USD.

The Company says recent discoveries between the Bralorne and King Mines have opened up significant new mineralization. Phase III exploration, now underway, is focused on expanding new zones and outlining reserves for a 20 tpd operation. The current Bralorne mill operates at 120 tpd with ample room for expansion. The aim is to increase production to 500 tpd.

The company received permit approval in January 2008 from the Ministry of Energy, Mines and Petroleum Resources for new cross-cutting and drifting in the BK zone, located between the Bralorne and King mines.

During the fourth quarter of 2007, the company prepared and installed new underground rail and rail ties, along with new ventilation and electrical systems to the Alhambra Drift at a total cost of approximately $1 million.

Exploration is also underway in the Lillooet area for gold, copper, and silver. In March 2005, Ts`kw`aylaxw and Graymont Western Canada Ltd. signed an agreement for a new long-term lease that will permit Graymont to continue its limestone mining and processing operations on Ts`kw`aylaxw lands until 2045.

# 16. AGRICULTURE IN LILLOOET[5]

Lillooet has a long history of supporting agriculture and ranching. The first tobacco in British Columbia was grown here during the Gold Rush and a co-op tomato cannery operated on Main Street until the 1950s. There is reason to think almost anything can be grown here.

According to a report in the July 4th 2012 Lillooet News, Parliamentary Secretary to the Premier and Chilliwack MLA John Les during a visit to Lillooet on 27 June "extolled Lillooet's potential as an agricultural centre." "You've got water—lots of it—flowing down the muddy Fraser River and when you throw water on this land, it grows stuff," said Les. "I think there's a lot of opportunity here. I think the Lillooet area can become one of the gardens of British Columbia." He suggested large-scale agriculture operations here could supply the Lower Mainland and meet the needs of the baby boomer market, which wants "good food, not necessarily from California or Mexico, but BC-grown. That's what they love, particularly if there's some kind of guarantee with it hasn't been sprayed with a lot of herbicide. You can successfully grow that way here in a dry climate. " Les continued, "If someone really took hold of that, I am sure Lillooet and area could become British Columbia's vegetable garden." He praised the efforts of Fort Berens Estate Winery owners Heleen Pannekoek and Rolf deBruin, explaining, "someone had an idea and they're running with it. That's what it ultimately takes—individuals conceiving an idea, taking the initiative and moving forward. There were lots of people who said you couldn't grow grapes in Lillooet, but you can. You just have to pick the right ones."

This enthusiasm for agriculture in Lillooet and area is well-founded. According to many long-time residents who have had sustained involvement with agriculture in the area, there is little that cannot be grown here in Lillooet. In fact there are many crops that can be grown in Lillooet which cannot be grown very many other places.

The District of Lillooet staff and the Mayor and Council are committed to the development of commercial agriculture in Lillooet. In the District of Lillooet's "Corporate Strategic Plan for 2007-2017", the District expands on Strategic Priority #4 to "maximize agriculture and crown land opportunities." For example, Lillooet has stated that "acquiring control of Crown Land inside our boundaries and outside the District is a high priority." The district also supports "the development of industries such as hemp production, hop production, organic farming and increasing ranch opportunities." And finally the District maintains that "agri-tourism and commercial agriculture can coincide and be successful." The commitment to agriculture is also expressed in Lillooet's Official Community Plan which calls for the community to work with the Ministry of Agriculture to research and promote new agricultural opportunities (e.g. food processing such as drying and canning and market gardens) and to amend zoning regulations to permit agri-tourism opportunities that are consistent with Agricultural Land Reserve (ALR) policies and regulations.

[5] This section uses portions of Wendy Fraser's "Advantage Lillooet: The Land, The Communities,The Opportunities"

## AGRICULTURE DATABASES

As stated above, there are many commercial crops that will flourish in Lillooet and its surrounding area. Two databases have been created to identify some of the crops that grow here and provide some preliminary information about each. These should serve as a starting point for someone thinking about growing a crop in Lillooet. The first database is titled "database zones 5 & 6" and looks at those crops hardy to zone five and zone six. The second is titled "database zones 3 & 4" and looks at those crops hardy to zone three and zone four.

For a definition and explanation of what a hardiness zone is, please visit: http://en.wikipedia.org/wiki/Hardiness_zones

Each database provides a wide range of information about the crops it lists. A main focus of the databases is the markets that are available for each crop and the various uses of each crop from industrial applications to food products. Information is also available about the current state of the industry particular to the commercial production of a given crop. Extensive information is also available about the cultivation and handling requirements of the different crops.

Each database is prefaced by an introduction. The introduction provides an overview of the main findings in its corresponding database. The introduction also supplements the information found in its database by discussing other relevant topics such as marketing, organic farming, and processing opportunities.

"introduction to database zones 5 & 6" can be found in Appendix 1 here
"database zones 5 & 6" can be found here
"introduction to database zones 3 &4" can be found in Appendix 2 here
"database zones 3 & 4" can be found here

A hardiness zone is a geographically defined area in which a specific category of plant life is capable of growing according to its ability to withstand the minimum temperatures of the zone. For example, pineapple is hardy to zone 10. The temperature for hardiness zone 10 is about +2 C. So pineapple cannot survive in hardiness zones defined by a lower temperature than +2 C. That means it cannot grow in any hardiness zone lower than hardiness zone 10. As a rule crops hardy to a particular zone cannot grow in any zone below it. A tomato is hardy to zone four. The minimum temperature which defines zone four is about -30 C. That is the minimum temperature that a tomato plant can survive under. Any zone below it will have a lower minimum temperature and therefore tomato cannot survive in it. The same cannot be said for the other direction. A crop hardy to zone 5 is also going to be hardy for some of the zones above it. Tomatoes, for example, which can withstand temperatures no lower than -30 C, can also grow in the zones above it because they have higher minimum temperatures. For example zone 6 is defined by a minimum temperature of -15 C. So a tomato can grow in zone 6 as well because it has a lower minimum temperature than zone 5 does.

## THE WINE INDUSTRY IN LILLOOET

When 900 grape vines were planted in May 2005 (50 each of nine red and nine white varietals), it was the first step towards developing a small scale wine industry along the sunny slopes of the Fraser River between Lillooet and Lytton. The grapes planted in 2005 became the basis of a study of the "Climatic Suitability and Feasibility Assessment of Growing Wine Grapes in the Lillooet-Lytton Area, British Columbia" (hereafter, "the report"). The report has shown that a wide range of wine varietals thrive at various sites throughout the Fraser Canyon between Lytton and Lillooet. The hope is that the Lillooet region will be able to go into full production and embark on a viniculture (wine-making industry).

Chances of successfully developing a wine grape-growing area are rated "very high," based on the high temperatures in the area, its long growing season, the creation of hardier grape varietals and the fact that Lillooet and Lytton are now in a warmer weather cycle. Private sector operators in the Okanagan are keenly interested in the local project and its progress. The high cost of land in the Okanagan makes it prohibitive to expand the wineries there, and companies are looking for new locations. The usefulness of the report is attested to by the fact its data was taken into consideration in the establishment of the Fort Berens Estate Vineyard and Winery at Lillooet. That winery is currently thriving and its wines are winning awards. Wineries will succeed in Lillooet.

## THE REPORT

The tables that follow this introduction are drawn from the "Climatic Suitability and Feasibility Assessment of Growing Wine Grapes in the Lillooet-Lytton Area, British Columbia" (hereafter, "the report"). The goal of the report is to provide production and climatic information for better assessment of the feasibility and suitability of commercial grape production in the Lytton-Lillooet area. The mechanism: collect and compile climatic data to help determine the suitability of an area for commercial grape production including the frost free period, growing degree-days (heat units), extreme minimum temperatures, and rainfall. This data is collected via weather stations and supplemental temperature data loggers. It is possible to view the location of each of these data loggers and weather stations using Google Earth. To do so, you will need to have Google Earth™ installed on your computer. If you do not have Google Earth™, click here for a free download. Once you have installed Google Earth use the following link to download the location of all of the data loggers:
http://lillooetbc.ca/getdoc/2bfb8888-d3fb-4b14-a29b-07cd95493f6e/Lillooet_wineries.aspx

What you will see is a 3-D map showing the extent of the project study area and locations of climate stations and data loggers. This means that you can use Google Earth to see the specific locations of all the climatic data gathering devices. In the far left column of table 6 and table 7 below is the number of a climate device. All of the data presented in table 6 and table 7 refers to these specific locations represented on the Google Earth map. In addition, using Google

Earth will allow you to see the lay of the land in the Fraser Canyon between Lytton and Lillooet—i.e. what does the land in that area look like?

Besides the data that makes up the report, one can also acquire detailed information about Solar Radiation in the study area. Calculated solar radiation maps developed in support of this project provide another tool in site selection for vineyard development. Solar radiation is a function of day length and the sun's angle to the earth and has a major effect on soil and air temperatures which (in grapes) affect vine phenology, and vine water requirements. A Geographical Information System (GIS) project has produced calculated solar radiation maps in support of the report. The maps are available as portable document format (pdf) files for viewing and download free of charge at www.solarradiationmapping.ca In addition to Calculated Solar Radiation, each maps sheet identifies the location and elevation of iButtons and provides supplemental data for 2007 to 2010 that includes Extreme Minimum Temperatures, Growing Degree Days, Frost Free Period, and the dates of the last spring frost and the first fall frost. The maps are suitable for any agricultural crop or project that requires knowledge of the amount of calculated solar radiation or climate data in the area.

The report provides detailed viticulture and climate data that are useful for the entire study area. Climate data generated by this report is useful as an assessment tool by producers for other crops. To that end, we will separate the tables of the report into two categories. The first will contain climatic data relevant to all crops. The second category will contain climatic information relevant only to grape growing

Rolf deBruin, owner of Fort Berens winery, expressed great confidence in the further development of the wine industry in Lillooet. Rolf explains that he and his family came to Lillooet "because of the land prices." "We had not that much capital and so we started at looking at Lillooet as an alternative to the Okanagan." Cheap land compensates for the expenses associated with other aspects of operating a winery. Aside from the appeal of more affordable land prices, the growing conditions in Lillooet are quite comparable to those found in other regions in the Okanagan. Says Rolf, "we have the most affordable agriculture regions within five hours of Vancouver." Much of the arable land in the area is currently held in low-use applications. The vast majority of arable lands in the region are used for haying. And given the wide range of sizes and shapes of land it is possible to find anything to suit your plan.

Also, Lillooet's proximity to Vancouver and Whistler is advantageous. It's easy for investors to come to Lillooet and for winery owners in Lillooet to go to the main markets for things like tradeshows and other occasions. Access to markets may improve if rail becomes a method for distribution. The increasing cost of oil may expedite this shift. The terrain and ruggedness, while not essential to a successful winery in the area, certainly helps.

*The photographs in the following section represent local terrain and farmland.*

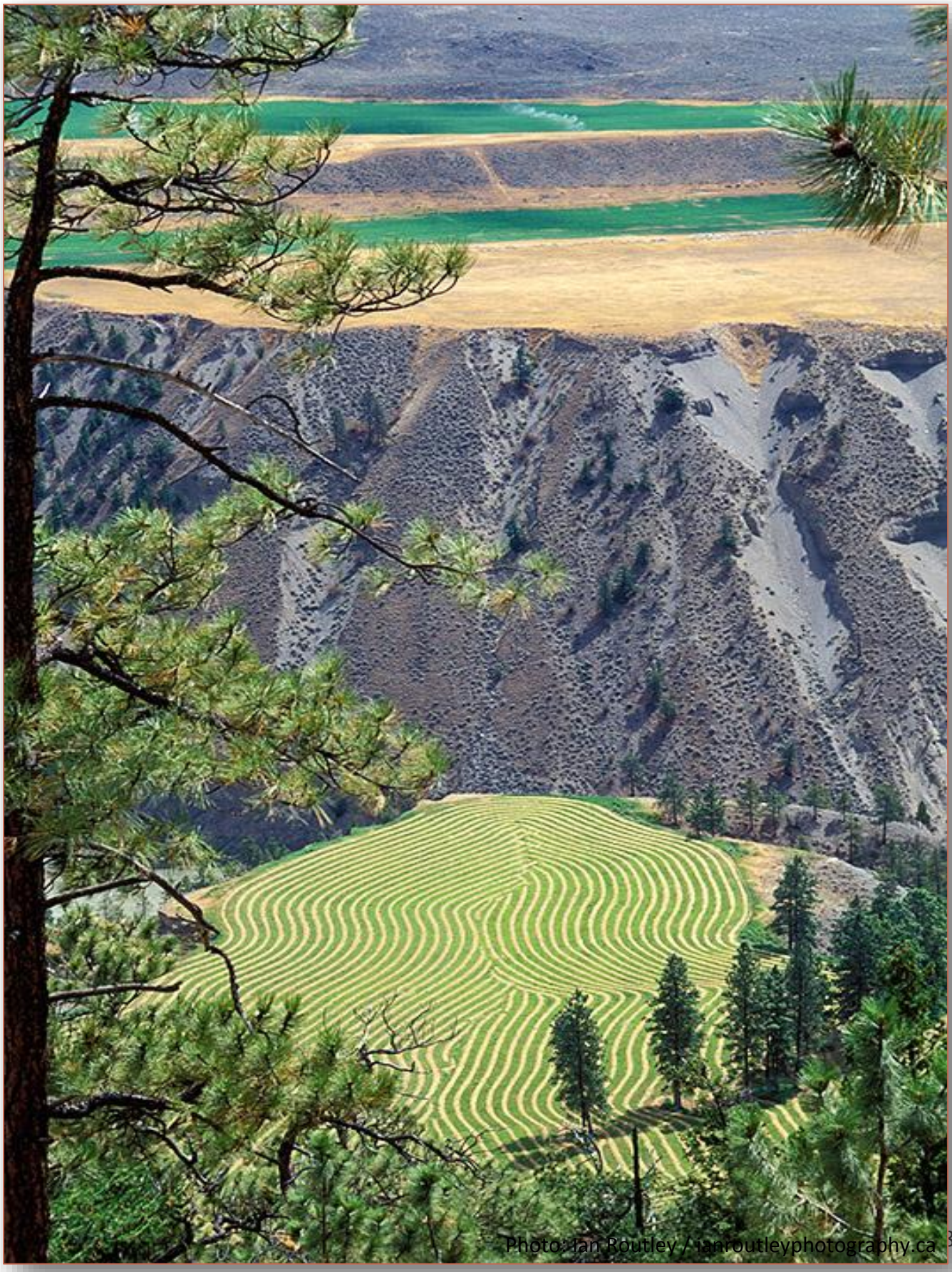


Photo: Ian Routley / ianroutleyphotography.ca

# LILLOOET CLIMATIC DATA RELEVANT TO ALL AGRICULTURE[6]

## Table 1 Location of Environment Canada Weather Station at Lillooet

| | | | |
|---|---|---|---|
| Active Stations | | | |
| Lillooet Station | Latitude 50º 41‟01.380N | Longitude 121º 56‟02.820'W | Elevation 235m |
| Deactivated Stations referred in Table 2, 3, and 4 | | | |
| Lillooet Seton BCHPA | Latitude 50º40‟24.000”N | Longitude 21º55‟27.000”W | Elevation 198.1m |
| Lillooet Russell St. | Latitude 5042”00.000”N | Longitude 2156‟00.000”W | Elevation 243.8m |

## Table 2 Lillooet Frost Free Periods and Extreme Minimum Temperatures

| Year | Date Last Spring Frost & Temp. (ºC) | Date First Fall Frost & Temp. (ºC) | Frost Free Periods in Days | Extreme Minimum Temperatures(ºC) |
|---|---|---|---|---|
| 1968 (Russell St.)* | April 22 (-1.1) | Nov. 1 (-2.8) | 193 | Dec. 30 (-31.1ºC) |
| 1969(Russell St.)* | April 3 (-1.1) | Oct. 4 (-1.1) | 184 | Jan. 29 (-31.1ºC) |
| 1995 (BCHPA)* | April 20 (-1.0) | Oct. 18 (-2.0) | 181 | Dec. 9 (-24.5) |
| 1996 (BCHPA)* | April 3 (-2.0) | Oct. 26 (-1.0) | 206 | Dec. 27 (-24.5) |
| 1997 (BCHPA)* | April 11 (-2.0) | Nov. 10 (-1.5) | 213 | Jan. 26 (-23.5) |
| 1998 | April 15 (-1.1) | Oct 24 (-0.2) | 192 | Jan 12 (-25.1) |
| 1999 | May 10 (-0.1) | Oct 23 (-0.3) | 166 | Jan 20 (-11.2) |
| 2000 | April 17 (-0.1) | Oct 6 (-0.8) | 172 | Jan 20(-15.5) |
| 2001 | April 12(-3.3) | Oct 25 (-1.2) | 196 | Feb 7 (-10.4) |
| 2002 | April 25 (-0.4) | Oct 12 (-1.5) | 170 | Jan 28 (-17.7) |
| 2003 | April 18 (-0.1) | Oct 15 (-0.1) | 180 | Mar 8 (-14.4) |
| 2004 | April 3 (-0.5) | Oct 27 (-1.3) | 207 | Jan 6 (-22.7) |
| 2005 | April 14 (-0.6) | Oct. 27 (-0.8) | 196 | Jan 15 (-25.4) |
| 2006 | April 17 (-0.6) | Oct. 30 (-3.7) | 196 | Nov. 29 (-20.0) |
| 2007 | Missing | Oct. 26 (-1.0) | M | Dec 8 (-18.2) |
| 2008 | April 26 (-0.1) | Oct. 9 (-1.1) | 166 | Dec. 20 (-24.6) |
| 2009 | April 26 (-0.1) | Oct. 10 (-0.6) | 167 | Dec. 14 ( -20.1) |
| 2010 | April 11 (-1.0) | Oct. 17 (-1.8) | 189 | Nov. 23 (- 16.2) |
| 2011 | April 23 (-0.9) | Oct. 15 (-2.5) | 175 | Feb. 25 (-16.1) |
| Average 1995-2011 | April 17 (-1.0) | Oct. 21 (-1.0) | 186 | Extreme minimum 1995 to 2011 = -24.6ºC Dec. 20, 2008 |

* See Table 1

[6] The tables in this section are drawn from “Progress Report 2011 – Climatic Suitability and Feasibility Assessment of Growing Wine Grapes In the Lillooet-Lytton Area, British Columbia” which can be found at http://lillooetbc.ca/business.aspx They have been assigned new numbers for the purpose of this document.

Table 3 Lytton and Lillooet Growing Degree Days (GDD) April – October (Base $10^0$ )

| Year | Lytton | Lillooet |
|---|---|---|
| 1951-80 | 1,368 | 1,266 |
| 1995 | 1,401 | 1,399 (BCHPA)* |
| 1996 | 1,223 | 1,203 (BCHPA)* |
| 1997 | 1,315 | 1,230 (BCHPA)* |
| 1998 | 1,665 | 1,719 |
| 1999 | 1,179 | 1,229 |
| 2000 | 1,257 | 1,262 |
| 2001 | 1,346 | 1,379 |
| 2002 | 1,310 | 1,406 |
| 2003 | 1,550 | 1,562 |
| 2004 | 1,618 | M |
| 2005 | 1,448 | 1460 |
| 2006 | 1,578 | M |
| 2007 | 1,338 | M |
| 2008 | 1,307 | 1,334 |
| 2009 | 1,644 | 1,651 |
| 2010 | 1,285 | 1,354 |
| 2011 | 1,282 | 1,313 |
| Average GDD 1998 -2011 | 1,415 | 1,424 |

* See Table 1. Average GDD calculated with available data. M = missing data

Photo: Ian Routley routleyphotography.ca

## Table 4 Precipitation (mm) - Lillooet

| | May | June | July | Aug | Sept | Oct | May- Oct. Total | Total Annual Precipitation (mm) |
|---|---|---|---|---|---|---|---|---|
| 1941-1970 | 21 | 28 | 25 | 26 | 33 | 46 | 179 | 327 |
| 1951-1980 | 16 | 30 | 21 | 26 | 26 | 31 | 276 | 276 |
| 1995 | 5 | 28 | 32 | 28 | 11 | 40 | 144 | > 276 (BCHPA)* |
| 1996 | 35 | 9 | 9 | 25 | 47 | 43 | 168 | > 252 (BCHPA)* |
| 1997 | 30 | 39 | 9 | 11 | 18 | 35 | 142 | 321 (BCHPA)* |
| 1998 | 15 | 29 | 44 | 4 | 24 | 30 | 146 | 334 |
| 1999 | 7 | 13 | 81 | 15 | 14 | 3 | 133 | 297 |
| 2000 | 52 | 14 | 37 | 21 | 16 | 52 | 192 | 265 |
| 2001 | 6 | 35 | 40 | 8 | 9 | 31 | 129 | 298 |
| 2002 | 32 | 9 | 13 | 19 | M | 1 | >74 | >166 |
| 2003 | 16 | 24 | 1 | 9 | 22 | 58 | 130 | 319 |
| 2004 | 24 | 22 | 32 | 9 | 30 | M | >117 | >173 |
| 2005 | M | M | 18 | 31 | 73 | M | >122 | >122 |
| 2006 | M | M | M | M | M | M | M | M |
| 2007 | M | M | M | 18 | 44 | M | >62 | >62 |
| 2008 | 32 | 39 | 8 | 22 | 32 | M | >133 | >133 |
| 2009 | 7 | 6 | 2 | 8 | M | M | >23 | >23 |
| 2010 | 68 | 17 | 13 | 21 | 50 | M | > 169 | >169 |
| 2011 | 69 | 10 | 21 | 0 | 10 | 0 | 110 | > 110 |
| Average 1995-2011 | 27 | 22 | 24 | 17 | 29 | 31 | 122 | > 186 |

*M means missing data. * See Table 1*

## Table 5 Minimum Temperatures (ºC) December 2010, February, March, November and December 2011 at Selected Environment Canada Weather Stations

| | Dates | | | | |
|---|---|---|---|---|---|
| **Stations** | **Dec.** | **Feb. 2011** | **March** | **Nov. 2011** | **Dec. 2011** |
| Kamloops A | -14.3 | -16.0 | -14.3 | -13.1 | -11.9 |
| Kelowna | -16.7 | --15.9 | - | -15.2 | -10.9 |
| Lillooet | -11.6 | -16.1 | -14.1 | -13.0 | -9.1 |
| Lytton | -11.3 | -15.5 | -13.5 | -13.4 | -8.1 |
| Lytton RCS | -11.5 | -15.8 | -13.9 | M | -8.3 |
| Penticton A | -12.6 | -14.9 | - | - | -9.8 |
| Summerland CS | -13.4 | -15.9 | - | - | -8.8 |
| Osoyoos CS | -12.1 | -13.2 | - | - | -8.9 |

Table 6 Extreme Minimum Winter Temperatures (º C) at iButton; Hobo Pro 2 and Weather Station Locations

| iButton Number (No.), Hobo Pro 2 and Elevation (m) | | Dec. | Jan. | Dec. | Jan. | Dec. | Jan. | Nov. | Feb. | Nov. |
|---|---|---|---|---|---|---|---|---|---|---|
| No. | m | 2007 | 2008 | 2008 | 2009 | 2009 | 2010 | 2010 | 2011 | 2011 |
| 1 | 340 | -17.3 | -19.4 | -24.1 | -19.0 | -21.0 | -13.9 | -16.6 | -16.6 | -14.3 |
| 2 | 190 | -18.1 | -17.7 | -22.8 | -18.3 | -18.9 | -14.5 | -15.3 | -15.5 | -14.4 |
| 3 | 217 | -17.6 | -18.8 | -23.7 | -18.3 | -19.9 | -14.5 | -15.4 | -15.4 | -14.2 |
| 4 | 341 | -18.0 | -19.4 | -23.6 | -18.9 | -19.9 | -14.4 | -16.1 | -16.6 | -15.7 |
| 5 | 336 | -18.3 | -19.4 | -23.9 | -19.5 | -20.5 | -15.7 | -16.5 | -16.3 | -15.6 |
| 6 | 328 | -19.5 | -21.4 | -24.1 | -19.9 | -19.9 | -13.7 | -16.9 | -16.0 | -17.9 |
| 7 | 309 | -17.8 | -19.9 | -26.3 | -19.9 | -22.4 | -15.4 | -18.1 | -17.2 | -14.1 |
| 8 | 424 | -21.4 | -21.5 | -29.0 | -22.8 | -23.8 | -18.4 | -20.1 | -19.0 | -19.0 |
| 9 | 340 | -17.7 | -20.2 | -26.5 | -20.0 | -22.4 | -15.0 | -17.5 | -17.2 | -13.7 |
| 9 Hobo Pro 2 | 340 | n/a | n/a | n/a | n/a | -22.7 | -15.0 | -17.7 | -14.2 | M |
| 10 | 315 | -18.5 | -19.0 | -25.5 | -20.3 | -20.9 | -15.2 | -17.6 | -15.9 | -12.8 |
| 11 | 225 | -16.4 | -18.4 | -24.2 | -18.2 | -20.1 | -15.1 | -17.1 | -15.3 | -12.8 |
| 12 | 349 | -17.8 | -19.6 | -25.7 | -19.9 | -21.3 | -14.2 | -16.4 | -16.3 | -13.1 |
| 13 | 300 | -20.4 | -19.4 | -25.3 | -20.4 | -20.3 | -16.1 | -16.9 | -16.6 | -17.1 |
| 14 | 271 | -18.2 | -18.1 | -22.2 | -18.7 | -18.9 | -14.7 | -15.3 | -15.6 | -14.6 |
| 15 | 297 | -18.0 | -18.2 | -22.4 | -18.2 | -19.2 | -14.2 | -15.2 | -16.0 | -13.6 |
| 16 | 263 | -19.2 | -18.8 | -23.8 | -19.0 | -20.1 | -13.9 | -16.9 | -17.7 | -15.5 |
| 16 Hobo Pro 2 | 265 | n/a | n/a | n/a | n/a | -20.1 | -14.6 | -16.7 | -14.0 | M |
| 17 | 297 | -19.3 | -18.8 | -23.5 | -19.0 | -19.4 | -14.5 | -17.2 | -16.1 | -14.6 |
| 18 | 339 | -17.7 | -19.1 | -23.2 | -18.6 | -19.4 | -14.6 | -16.9 | -16.3 | -17.1 |
| 19 | 316 | -17.7 | -18.8 | -23.5 | -18.7 | -19.7 | -14.1 | -16.6 | -16.6 | -14.9 |
| 20 | 241 | -17.7 | -18.0 | -22.6 | -18.0 | -18.6 | -13.9 | -15.9 | -16.0 | -14.6 |
| 21 | 267 | -17.0 | -18.4 | -23.6 | -18.6 | -19.6 | -14.2 | -15.9 | -16.0 | -13.9 |
| 22 | 284 | -20.1 | -20.5 | -26.3 | -20.7 | -20.9 | -15.3 | -17.2 | -17.7 | -15.2 |
| 23 | 200 | -18.2 | -18.9 | -24.2 | -18.7 | -19.6 | -14.6 | -16.1 | -16.1 | -14.6 |
| 24 | 369 | -17.2 | -18.9 | -23.7 | -18.9 | 19.9 | -13.0 | -16.7 | -17.3 | -14.8 |
| 25 | 375 | -17.3 | -19.6 | -24.4 | -19.3 | -20.5 | -13.7 | -16.7 | -17.2 | -15.0 |
| 26 | 352 | -17.8 | -18.8 | -23.5 | -18.5 | -19.5 | -13.5 | -16.5 | -16.7 | -14.9 |
| 27 | 318 | -17.6 | -18.7 | -23.4 | -18.6 | -19.9 | -13.9 | -16.6 | -16.8 | -14.7 |
| 28 | 375 | -22.5 | -21.8 | -29.1 | -22.5 | -21.7 | -16.0 | -22.9 | -20.0 | -15.7 |
| 29 | 385 | -21.9 | -21.9 | -28.6 | -22.1 | -21.8 | -15.1 | M | -18.6 | -14.8 |
| 30 | 405 | -18.6 | -20.9 | -27.6 | -21.3 | -23.2 | -15.7 | -18.7 | -18.7 | -15.3 |

***Table 6 continued on page 83, 84, 85***

Table 6 Extreme Minimum Winter Temperatures (º C) at iButton; Hobo Pro 2 and Weather Station Locations

| iButton Number (No.), Hobo Pro 2 and Elevation (m) | | Dec. | Jan. | Dec. | Jan. | Dec. | Jan. | Nov. | Feb. | Nov. |
|---|---|---|---|---|---|---|---|---|---|---|
| No. | m | 2007 | 2008 | 2008 | 2009 | 2009 | 2010 | 2010 | 2011 | 2011 |
| 31 | 413 | -18.8 | -21.3 | -28.2 | -21.6 | -23.5 | -15.5 | -18.7 | -18.7 | -15.8 |
| 32 | 238 | -17.2 | -18.6 | -24.8 | -19.1 | -20.6 | -14.8 | -16.8 | -15.6 | -13.2 |
| 33 | 255 | -16.6 | -17.3 | -22.2 | -17.1 | -18.6 | -14.2 | -15.2 | -15.9 | -14.4 |
| 34 | 264 | -16.3 | -17.0 | -22.5 | -17.4 | -18.3 | -13.4 | -15.0 | -15.3 | -13.6 |
| 35 | 310 | -16.3 | -17.6 | -23.2 | -17.5 | -19.2 | -13.5 | -15.6 | -15.9 | -13.7 |
| 36 | 415 | -16.9 | -19.2 | -24.1 | -18.5 | -20.0 | -13.5 | -17.5 | -16.4 | -14.2 |
| 37 | 352 | -16.5 | -18.6 | -23.5 | -18.3 | -19.5 | -12.9 | -17.2 | -16.5 | -15.0 |
| 38 | 243 | -14.6 | -17.4 | -24.1 | -17.2 | -19.2 | -10.7 | -17.2 | -17.3 | -14.2 |
| 38 Hobo Pro 2 | 243 | n/a | n/a | n/a | n/a | -19.2 | -10.9 | -17.0 | -11.1 | M |
| 39 | 265 | -14.8 | -17.6 | -24.3 | -17.8 | -19.1 | -11.0 | -17.3 | -17.4 | -14.5 |
| 40 | 266 | -15.3 | -16.9 | -24.3 | -17.5 | -18.8 | -11.5 | -16.0 | -15.1 | -13.8 |
| 41 | 287 | -15.2 | -17.3 | -23.7 | -17.3 | -19.6 | -10.7 | -17.9 | -16.5 | -12.7 |
| 42 | 255 | -15.3 | -16.9 | -23.4 | -17.3 | -19.1 | -13.3 | -16.0 | -15.8 | -14.9 |
| 43 | 240 | -15.3 | -16.9 | -23.9 | -17.9 | -18.7 | -11.7 | -16.4 | -15.7 | -14.4 |
| 44 | 520 | -17.6 | -21.6 | -23.3 | n/a | -24.2 | -14.0 | -21.6 | -19.9 | -14.8 |
| 44 Hobo Pro 2 | 520 | n/a | n/a | n/a | n/a | -23.8 | -13.8 | -22.4 | -16.1 | M |
| 45 | 412 | -18.0 | -20.0 | -24.3 | -19.6 | -20.8 | -13.2 | -16.3 | -16.7 | -14.4 |
| 46 | 285 | -18.1 | -19.3 | -24.6 | -19.3 | -20.7 | -14.5 | -15.9 | -16.9 | -14.9 |
| 47 | 256 | -17.0 | -18.9 | -23.4 | -18.2 | -19.6 | -13.6 | -15.6 | -15.6 | -13.7 |
| 48 | 210 | -16.9 | -18.1 | -23.2 | -18.0 | -19.2 | -14.0 | -15.0 | -14.8 | -13.7 |
| 49 | 196 | -17.7 | -18.6 | -23.6 | -18.6 | -19.1 | -13.9 | -15.2 | -15.2 | -14.2 |
| 49 Hobo Pro 2 | 200 | n/a | n/a | n/a | n/a | -19.2 | -14.0 | -15.1 | -12.8 | M |
| 50 | 190 | -15.9 | -17.0 | -22.7 | -17.5 | -18.4 | -10.2 | -17.1 | -16.6 | -13.9 |
| 50 Hobo Pro 2 | 190 | n/a | n/a | n/a | n/a | -18.6 | -10.5 | -16.3 | -11.0 | M |
| 51 | 175 | -16.1 | -17.6 | -23.4 | -16.9 | -19.4 | -13.2 | -16.6 | -16.3 | -15.4 |
| 52 | 157 | -16.3 | -17.5 | -23.3 | -16.9 | -19.1 | -12.2 | -16.6 | -16.8 | -15.1 |
| 53 | 348 | -18.9 | -20.0 | -25.4 | -20.0 | -20.7 | -16.4 | -16.4 | -16.4 | -15.5 |
| 54 | 353 | -18.2 | -19.9 | -24.7 | -19.4 | -20.6 | -15.0 | -16.5 | -16.4 | -14.5 |
| 55 | 364 | -17.6 | -19.9 | -24.8 | -19.2 | -21.1 | -14.9 | -16.8 | -16.8 | -15.8 |
| 56 | 364 | -17.3 | -20.0 | -25.3 | -19.8 | -21.5 | -14.5 | -16.5 | -16.6 | -15.4 |
| 57 | 416 | -17.4 | -20.1 | -25.1 | -19.9 | -21.3 | -13.3 | -16.5 | -16.5 | -14.3 |
| 58 | 382 | -17.3 | -20.2 | -24.6 | -18.9 | -20.9 | -13.5 | -16.6 | -16.8 | -14.2 |
| 59 | 302 | -20.0 | -19.5 | -24.8 | -20.0 | -19.6 | -15.5 | -17.8 | -15.7 | -16.9 |

Table 6 Extreme Minimum Winter Temperatures (º C) at iButton; Hobo pro 2 and Weather Station Locations

| iButton Number (No.), Hobo Pro 2 and Elevation (m) | | Dec. | Jan. | Dec. | Jan. | Dec. | Jan. | Nov. | Feb. | Nov. |
|---|---|---|---|---|---|---|---|---|---|---|
| No. | m | 2007 | 2008 | 2008 | 2009 | 2009 | 2010 | 2010 | 2011 | 2011 |
| 60 | 402 | -22.5 | -22.9 | -28.9 | -22.4 | -23.4 | -17.2 | -19.2 | -19.7 | -16.1 |
| 61 | 158 | -15.1 | -17.4 | -24.1 | -17.6 | -19.4 | -14.5 | -16.7 | -16.1 | -15.8 |
| 62 | 250 | -16.2 | -16.6 | -22.5 | -17.2 | -18.3 | -13.4 | -15.2 | -15.5 | -13.9 |
| 63 | 275 | -16.2 | -17.1 | -22.8 | -17.2 | -18.4 | -13.3 | -15.7 | -15.6 | -14.0 |
| 64 | 250 | -16.3 | -17.6 | -23.4 | -17.0 | -19.8 | -10.6 | -16.1 | -15.6 | -13.7 |
| 65 | 274 | -17.3 | -19.4 | -24.1 | -18.3 | -21.4 | -12.8 | -18.2 | -16.9 | -14.2 |
| 66 | 200 | -16.6 | -16.7 | -22.9 | -17.3 | -18.8 | -13.4 | -15.8 | -15.9 | -13.7 |
| 67 | 275 | -16.9 | -17.7 | -22.9 | -17.7 | -18.7 | -13.4 | -16.0 | -16.2 | -13.9 |
| 68 | 302 | -16.7 | -18.0 | -23.6 | -18.4 | -19.1 | -13.9 | -16.0 | -15.7 | -14.4 |
| 69 | 288 | M | -19.2 | -25.4 | -20.6 | -19.9 | -16.7 | -18.3 | -15.8 | -17.2 |
| 70 | 277 | -18.4 | -19.1 | -24.4 | -19.6 | -19.4 | -17.5 | -17.0 | -15.6 | -15.5 |
| 71 | 318 | -17.1 | -19.1 | -23.6 | -18.9 | -19.7 | -13.8 | -16.1 | -16.2 | -14.3 |
| 72 | 407 | -19.8 | -21.8 | -28.0 | -21.1 | -23.6 | -15.3 | -19.5 | -19.1 | -15.0 |
| 73 | 572 | -20.2 | -24.6 | -29.1 | -22.7 | -25.6 | -16.1 | -22.1 | -21.3 | -15.4 |
| 74 | 400 | -21.1 | -22.9 | -30.1 | -23.8 | -26.0 | -16.9 | -19.2 | -19.8 | -16.1 |
| 74 Hobo Pro 2 | 400 | n/a | n/a | n/a | n/a | -26.3 | -16.7 | -19.9 | -17.7 | M |
| 75 | 285 | -19.9 | -21.8 | -29.1 | -22.0 | -24.9 | -16.0 | -17.6 | -18.4 | -15.6 |
| 76 | 490 | -20.3 | -23.0 | -31.4 | -24.0 | -26.9 | -16.9 | -19.7 | -20.1 | -16.9 |
| 77 | 510 | -22.6 | -23.9 | -30.3 | -24.3 | -27.2 | -16.7 | -20.7 | -20.5 | -17.0 |
| 78 | 465 | -20.8 | -23.0 | -31.1 | -24.4 | -27.1 | -16.8 | -19.7 | -20.9 | -16.9 |
| 79 | 428 | -21.7 | -22.5 | -30.4 | -24.0 | -27.3 | -16.7 | -19.4 | -20.2 | -16.6 |
| 80 | 222 | -17.4 | -17.3 | -22.1 | -17.8 | -18.5 | -13.7 | -15.5 | -15.9 | -13.3 |
| 81 | 182 | -17.3 | -16.8 | -21.4 | -17.1 | -17.8 | -13.5 | -15.0 | -15.2 | -13.1 |
| 82 | 300 | -17.1 | -19.4 | -24.7 | -20.6 | -20.7 | -16.3 | -18.7 | -16.0 | -16.1 |
| 83 | 445 | -19.4 | -21.5 | -20.0 | M | -24.2 | -15.2 | -19.2 | -18.7 | -15.0 |
| 83 Hobo Pro 2 | 445 | n/a | n/a | n/a | n/a | -24.5 | -15.7 | -19.0 | -15.8 | M |
| 84 | 304 | -18.0 | -18.9 | -24.9 | -19.2 | -20.8 | -15.2 | -18.2 | -15.8 | -13.0 |
| 85 | 210 | -16.4 | -18.1 | -24.0 | -18.8 | -19.3 | -14.8 | -16.2 | -15.1 | -12.8 |
| 86 | 308 | -19.2 | -18.9 | -24.8 | -19.5 | -19.6 | -14.1 | -17.2 | -17.0 | -15.4 |
| 86 Hobo Pro 2 | 308 | n/a | n/a | n/a | n/a | -19.8 | -15.1 | -17.5 | -14.2 | M |
| 87 | 400 | -16.7 | -18.9 | -23.9 | -18.2 | -20.0 | -12.2 | -18.1 | -17.0 | -14.6 |
| 87 Hobo Pro 2 | 400 | n/a | n/a | n/a | n/a | -17.8 | -12.4 | -16.7 | -13.5 | M |

Table 6 Extreme Minimum Winter Temperatures (º C) at iButton; Hobo Pro 2 and Weather Station Locations

| iButton Number (No.), Hobo pro 2 and Elevation (m) | | Dec. | Jan. | Dec. | Jan. | Dec. | Jan. | Nov. | Feb. | Nov. |
|---|---|---|---|---|---|---|---|---|---|---|
| **No.** | **m** | **2007** | **2008** | **2008** | **2009** | **2009** | **2010** | **2010** | **2011** | **2011** |
| 88 Hobo Pro 2 | 540 | n/a | n/a | n/a | -20.4 | n/a | -15.2 | -16.4 | -14.7 | M |
| 89 Hobo Pro 2 | 393 | n/a | n/a | n/a | -14.8 | n/a | -4.4 | -14.0 | M | M |
| **Project and Environment Canada Weather Stations** | | | | | | | | | | |
| Grossler | 304 | -19.7 | -19.7 | -26.0 | -19.9 | -21.2 | -16.6 | -18.8 | -16.1 | -13.4 |
| Ruddock | 400 | -18.0 | -19.6 | -24.5 | -19.00 | -20.6 | -14.0 | -18.6 | -17.9 | -15.5 |
| Roshard | 210 | -18.3 | -19.2 | -24.8 | -19.00 | -19.9 | -15.7 | -17.1 | -15.7 | -13.5 |
| Diamond S | 445 | -19.3 | -14.4 | -27.4 | M | -23.6 | -14.7 | -18.4 | M | M |
| Halfway Ranch | 308 | -17.9 | -18.6 | M | -19.5 | -19.7 | M | -16.4 | -17.2 | -14.4 |
| Lillooet | 235 | -17.5 | -18.5 | -24.6 | -19.0 | -20.1 | -15.0 | -16.2 | -16.1 | -13.0 |
| Lytton | 225 | -16.0 | -16.7 | -23.5 | -17.3 | -18.8 | -11.1 | -15.7 | -15.5 | -13.4 |

n/a means not available. M means missing data

Table 7 Total Growing Degree Days (GDD) and Length of Frost Free Season at iButton; Hobo Pro 2 and Weather Station Locations

| iButton Number (No.), Hobo Pro 2 and Elevation (m) | | Growing Degree Days[1] Corrected Data (Base 10°C) | | | | | Length of Frost Free Period (Days) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | m | 2007* | 2008 | 2009 | 2010 | 2011 | 2007* | 2008 | 2009 | 2010 | 2011 |
| 1 | 340 | 475 | 1310 | 1708 | 1420 | 1311 | 188 | 169 | 169 | 189 | 178 |
| 2 | 190 | 364 | 1055 | 1302 | 1088 | 991 | 188 | 166 | 169 | 189 | 174 |
| 3 | 217 | 411 | 1206 | 1492 | 1196 | 1146 | 188 | 169 | 169 | 189 | 175 |
| 4 | 341 | 414 | 1148 | 1458 | 1179 | 1114 | 188 | 169 | 169 | 189 | 175 |
| 5 | 336 | 403 | 1108 | 1398 | 1131 | 1131 | 188 | 169 | 167 | 177 | 175 |
| 6 | 328 | 362 | 1065 | 1338 | 1015 | 976 | 188 | 166 | 169 | 189 | 178 |
| 7 | 309 | 463 | 1403 | 1682 | 1381 | 1371 | 188 | 171 | 178 | 189 | 178 |
| 8 | 424 | 425 | 1244 | 1550 | 1261 | 1205 | 187 | 158 | 158 | 160 | 173 |
| 9 | 340 | 457 | 1320 | 1621 | 1310 | 1278 | 187 | 169 | 169 | 190 | 178 |
| 9 Hobo Pro 2 | 340 | n/a | n/a | 1610 | 1312 | M | n/a | n/a | 169 | 190 | M |
| 10 | 315 | 472 | 1282 | 1579 | 1239 | 1227 | 187 | 160 | 167 | 188 | 173 |
| 11 | 225 | 471 | 1306 | 1586 | 1299 | 1300 | 188 | 166 | 165 | 188 | 174 |
| 12 | 349 | 463 | 1306 | 1612 | 1271 | 1231 | 188 | 166 | 169 | 190 | 178 |
| 13 | 300 | 357 | 1175 | 1526 | 1203 | 1167 | 188 | 166 | 152 | 160 | 173 |
| 14 | 271 | 388 | 1286 | 1604 | 1312 | 1242 | 188 | 166 | 169 | 189 | 178 |
| 15 | 297 | 404 | 1289 | 1580 | M | 1229 | 188 | 166 | 166 | 189 | 178 |
| 16 | 263 | M | 1131 | 1450 | 1153 | 1075 | M | 166 | 167 | 189 | 175 |
| 16 Hobo Pro 2 | 265 | n/a | n/a | 1394 | 1152 | M | n/a | n/a | 167 | 189 | M |
| 17 | 297 | 383 | 1197 | 1493 | 1176 | 1144 | 188 | 166 | 167 | 190 | 175 |
| 18 | 339 | 392 | 1247 | 1528 | 1170 | 1146 | 188 | 166 | 169 | 189 | 175 |
| 19 | 316 | 381 | 1229 | 1522 | 1205 | 1178 | 188 | 166 | 169 | 189 | 175 |
| 20 | 241 | 416 | 1295 | 1654 | M | 1176 | 188 | 166 | 169 | 190 | 175 |
| 21 | 267 | 376 | 1278 | 1615 | 1288 | 1218 | 188 | 169 | 167 | 189 | 174 |
| 22 | 284 | 358 | 1220 | 1530 | 1221 | 1174 | 188 | 160 | 165 | 164 | 173 |
| 23 | 200 | 376 | 1252 | 1573 | 1341 | 1238 | 188 | 166 | 167 | 189 | 174 |
| 24 | 369 | 385 | 1296 | 1596 | 1264 | 1229 | 188 | 169 | 169 | 189 | 178 |
| 25 | 375 | M | 1291 | 1563 | 1230 | 1196 | M | 166 | 169 | 189 | 178 |
| 26 | 352 | M | 1266 | 1546 | 1223 | 1184 | M | 169 | 169 | 189 | 175 |
| 27 | 318 | 392 | M | 1589 | 1282 | 1266 | 188 | 169 | 169 | 189 | 175 |
| 28 | 375 | 206 | 1141 | 1423 | 1135 | 1068 | 175 | 160 | 159 | 160 | 173 |
| 29 | 385 | 201 | 1131 | 1442 | 1124 | 1104 | 175 | 159 | 160 | 160 | 173 |
| 30 | 405 | 227 | 1202 | 1493 | 1165 | 1166 | 188 | 166 | 169 | 163 | 173 |

***Table 7 continued on page 87, 88 and 89***

Table 7 Total Growing Degree Days (GDD) [1] and Length of Frost Free Season at iButton; Hobo Pro 2 and Weather Station Locations

| iButton Number (No.), Hobo Pro 2 and Elevation (m) | | Growing Degree Days [1] Corrected Data (Base 10°C) | | | | | Length of Frost Free Period (Days) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | m | 2007* | 2008 | 2009 | 2010 | 2011 | 2007* | 2008 | 2009 | 2010 | 2011 |
| 31 | 413 | 250 | 1291 | 1557 | 1283 | 1255 | 188 | 169 | 169 | 160 | 174 |
| 32 | 238 | 277 | 1324 | 1639 | 1354 | 1321 | 175 | 166 | 165 | 190 | 174 |
| 33 | 255 | 291 | 1247 | 1534 | 1243 | 1277 | 175 | 168 | 169 | 175 | 175 |
| 34 | 264 | 305 | 1321 | 1605 | 1321 | 1283 | 188 | 168 | 169 | 189 | 175 |
| 35 | 310 | 301 | 1318 | 1613 | 1272 | 1227 | 175 | 169 | 169 | 189 | 178 |
| 36 | 415 | 269 | 1222 | 1471 | 1218 | 1222 | 188 | 169 | 169 | 189 | 178 |
| 37 | 352 | 280 | 1249 | 1537 | 1218 | 1184 | 188 | 169 | 169 | 189 | 175 |
| 38 | 243 | 263 | 1352 | 1630 | 1333 | 1313 | 188 | 166 | 169 | 189 | 175 |
| 38 Hobo Pro 2 | 243 | n/a | n/a | 1577 | 1356 | M | n/a | n/a | 169 | 189 | M |
| 39 | 265 | 256 | 1315 | 1598 | 1274 | 1254 | 175 | 166 | 169 | 189 | 175 |
| 40 | 266 | 271 | 1280 | 1569 | 1259 | 1219 | 189 | 172 | 169 | 221 | 192 |
| 41 | 287 | 286 | 1364 | 1582 | 1288 | 1251 | 188 | 172 | 170 | 190 | 179 |
| 42 | 255 | 275 | 1308 | 1603 | 1305 | 1286 | 188 | 166 | 169 | 189 | 176 |
| 43 | 240 | M | 1236 | 1495 | 1198 | 1186 | M | 169 | 169 | 215 | 192 |
| 44 | 520 | 205 | 921 | 1190 | 888 | 859 | 188 | 159 | M | 148 | 154 |
| 44 Hobo Pro 2 | 520 | n/a | n/a | 1179 | 909 | M | n/a | n/a | M | 148 | M |
| 45 | 412 | 240 | 1184 | 1477 | 1180 | 1103 | 188 | 169 | 169 | 189 | 178 |
| 46 | 285 | 229 | 1166 | 1510 | 1181 | 1147 | 188 | 166 | 167 | 189 | 174 |
| 47 | 256 | 275 | 1285 | 1609 | 1310 | 1263 | 188 | 171 | 169 | 189 | 178 |
| 48 | 210 | 190 | 1220 | 1549 | 1261 | 1223 | 188 | 171 | 167 | 189 | 175 |
| 49 | 196 | 202 | 1311 | 1642 | 1379 | 1275 | 188 | 166 | 167 | 189 | 174 |
| 49 Hobo Pro 2 | 200 | n/a | n/a | 1593 | 1436 | M | n/a | n/a | 167 | 189 | M |
| 50 | 190 | 235 | 1308 | 1565 | 1312 | 1306 | 188 | 160 | 167 | 188 | 175 |
| 50 Hobo Pro 2 | 190 | n/a | n/a | 1499 | 1292 | M | n/a | n/a | 167 | 189 | 174 |
| 51 | 175 | 225 | 1233 | 1526 | 1263 | 1247 | 187 | 160 | 167 | 144 | 184 |
| 52 | 157 | 247 | 1298 | 1590 | 1286 | 1280 | 187 | 160 | 160 | 174 | 175 |
| 53 | 348 | 203 | 1089 | 1439 | 1066 | 1179 | 188 | 166 | 165 | 174 | 175 |
| 54 | 353 | 201 | 1130 | 1698 | 1252 | 1202 | 188 | 166 | 169 | 189 | 174 |
| 55 | 364 | 215 | 1164 | 1579 | 1162 | 1069 | 188 | 166 | 169 | 189 | 174 |
| 56 | 364 | 210 | n/a | 1516 | 1163 | 1119 | 188 | 166 | 169 | 190 | 178 |
| 57 | 416 | 218 | 1166 | 1450 | 1160 | 1115 | 188 | 169 | 169 | 184 | 177 |
| 58 | 382 | 161 | 1225 | 1561 | 1259 | 1196 | 188 | 169 | 189 | 190 | 174 |
| 59 | 302 | 151 | 1154 | 1476 | 1127 | 1134 | 188 | 166 | 160 | 163 | 174 |

Table 7 Total Growing Degree Days (GDD) [1] and Length of Frost Free Season at iButton; Hobo Pro 2 and Weather Station Locations

| I Button Number (No.), Hobo Pro 2 and Elevation (m) | | Growing Degree Days [1] Corrected Data (Base 10°C) | | | | | Length of Frost Free Period (Days) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | m | 2007* | 2008 | 2009 | 2010 | 2011 | 2007* | 2008 | 2009 | 2010 | 2011 |
| 60 | 402 | 132 | 1128 | 1423 | 1073 | 1061 | 187 | 158 | 160 | 160 | 154 |
| 61 | 158 | 139 | 1321 | 1599 | 1310 | 1258 | 188 | 160 | 160 | 174 | 174 |
| 62 | 250 | 133 | 1272 | 1566 | 1240 | 1222 | 188 | 166 | 169 | 189 | 175 |
| 63 | 275 | 128 | 1250 | 1537 | 1240 | 1222 | 188 | 169 | 169 | 189 | 176 |
| 64 | 250 | 136 | 1278 | 1575 | 1311 | 1254 | 188 | 166 | 167 | 214 | 179 |
| 65 | 274 | 475 | 1310 | 1586 | 1293 | 1256 | 188 | 169 | 169 | 188 | 175 |
| 66 | 200 | 136 | 1315 | 1609 | 1323 | 1248 | 188 | 122 | 169 | 189 | 175 |
| 67 | 275 | 127 | 1258 | 1579 | 1344 | 1260 | 188 | 169 | 169 | 189 | 178 |
| 68 | 302 | 62 | M | 1540 | 1346 | 1264 | 188 | 169 | 169 | 189 | 175 |
| 69 | 288 | 50 | 1224 | 1555 | 1206 | 1178 | 188 | 166 | 160 | 160 | 173 |
| 70 | 277 | 51 | 1160 | 1449 | 1105 | 1101 | 142 | 160 | 165 | 163 | 173 |
| 71 | 318 | 52 | M | 1594 | 1253 | 1193 | 188 | 169 | 169 | 189 | 178 |
| 72 | 407 | 39 | 1318 | 1554 | 1256 | 1218 | 175 | 169 | 169 | 189 | 176 |
| 73 | 572 | 24 | 1085 | 1356 | 1017 | 998 | 187 | 162 | 162 | 163 | 174 |
| 74 | 400 | 58 | 1397 | 1656 | 1380 | 1317 | 188 | 171 | 189 | 190 | 178 |
| 74 Hobo Pro 2 | 400 | n/a | n/a | 1552 | 1333 | M | n/a | n/a | 189 | 190 | M |
| 75 | 285 | 76 | 1468 | 1729 | 1503 | 1424 | 188 | 171 | 169 | 190 | 176 |
| 76 | 490 | 62 | 1361 | 1570 | 1314 | 1263 | 188 | 171 | 164 | 166 | 175 |
| 77 | 510 | 55 | 1312 | 1544 | 1255 | 1172 | 188 | 171 | 178 | 166 | 177 |
| 78 | 465 | 63 | 1383 | 1577 | 1353 | 1264 | 188 | 171 | 177 | 189 | 177 |
| 79 | 428 | 67 | 1393 | 1646 | 1359 | 1283 | 188 | 171 | 169 | 166 | 176 |
| 80 | 222 | 35 | 1345 | 1668 | 1359 | 1307 | 188 | 166 | 169 | 189 | 175 |
| 81 | 182 | 34 | 1302 | 1611 | 1306 | 1264 | 188 | 171 | 169 | 189 | 178 |
| 82 | 300 | 66 | 1240 | 1578 | 1266 | 1205 | 175 | 161 | 160 | 160 | 154 |
| 83 | 445 | 0 | 1304 | 1524 | 1254 | 1233 | M | 171 | M | 190 | 176 |
| 83 Hobo Pro 2 | 445 | n/a | n/a | 1444 | 1250 | M | n/a | n/a | M | 190 | M |
| 84 | 304 | 0 | 1304 | 1613 | 1323 | 1293 | M | 160 | 160 | 160 | 173 |
| 85 | 210 | 0 | 1268 | 1607 | 1312 | 1273 | M | 160 | 167 | 189 | 175 |
| 86 | 308 | 0 | 1292 | 1621 | 1248 | 1182 | M | 166 | 169 | 189 | 175 |
| 86 Hobo Pro 2 | 308 | n/a | n/a | 1551 | 1274 | M | n/a | n/a | 169 | 189 | M |
| 87 | 400 | 0 | 1269 | 1553 | 1225 | 1166 | M | 166 | 169 | 189 | 178 |
| 87 Hobo Pro 2 | 400 | n/a | n/a | 1519 | 1241 | M | n/a | n/a | 169 | 189 | M |

Table 7 Total Growing Degree Days (GDD) 1 and Length of Frost Free Season at iButton; Hobo Pro 2 and Weather Station Locations

| iButton Number (No.), Hobo Pro 2 and Elevation | | Growing Degree Days [1] Corrected Data (Base 10°C) | | | | | Length of Frost Free Period (Days) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N | m | 2007* | 2008 | 2009 | 2010 | 2011 | 2007* | 2008 | 2009 | 2010 | 2011 |
| 88 Hobo Pro | 540 | n/a | n/a | 1393 | 1084 | M | n/a | n/a | M | 189 | M |
| 89 Hobo Pro | 393 | n/a | n/a | 1342 | 1106 | M | n/a | n/a | M | 163 | M |
| | Project and Environment Canada Weather Stations | | | | | | | | | | |
| Grossler | 304 | 1236 | 1215 ** | 1573 | 1351 | 1327 | M | 160 | 160 | 160 | 154 |
| Ruddock | 400 | 1261 | 1218** | 1667 | 1328 | 1306 | M | 160 | 162 | 175 | 175 |
| Roshard | 210 | 980 | 1201** | 1597 | 1286 | 1252 | 166 | 160 | 169 | 189 | 154 |
| Diamond S | 445 | 129 | 1264** | 1503 | 1255 | M | M | 171 | 189 | 190 | M |
| Halfway | 308 | 136 | 1206** | 1517 | 1231 | 1176 | M | 166 | 169 | 189 | 175 |
| Ranch | 235 | M | 1333 | 1651 | 1351 | 1313 | M | 166 | 167 | 189 | 175 |
| Lillooet | 225 | 1335 | 1301 | 1644 | 1285 | 1282 | 205 | 168 | 169 | 214 | 192 |

* Partial data. IButtons installed in late 2007. ** Missing data. IButton data used. M means missing data. n/a means not available.

## LILLOOET CLIMATIC DATA RELEVANT TO GRAPE CULTIVATION[7]

Table 8 Approximate Dates of Phenology Events in Test Vineyards 2011

| Vineyard | Fuzzy Bud to Bud Break | Bloom | Veraison | Harvest (see Table 11 and 12) |
|---|---|---|---|---|
| Pietila | May 9 to 14 | June 7 to 20 | Aug. 31 to Sept. 2 | Oct. 1 to 8 |
| Roshard | May 9 to 14 | June 7 to 20 | Aug. 31 to Sept. 2 | Oct. 9 to 16 |
| Wonderland | May 9 to 14 | June 7 to 20 | Aug. 31 to Sept. 2 | Oct. 9 to 15 |

Table 9 Fruit Quality Analysis Provided by Pietila Vineyard 2011

| Variety | Brix % | Harvest Date |
|---|---|---|
| Cabernet Franc | 15.0 | Oct. 8 |
| Chardonnay | 20.0 | Oct. 8 |
| Cocseji Zamatos | 19.0 | Oct. 8 |
| Foch | 16.3 | Oct. 8 |
| Johannisberg Riesling | 19.1 | Oct. 8 |
| Pinot blanc | 19.0 | Oct. 8 |
| Pinot gris | 21.0 | Oct. 8 |
| Syrah | 18.5 | Oct. 8 |

Photo: Fort Berens

[7]The tables in this section are drawn from "Progress Report 2011 – Climatic Suitability and Feasibility Assessment of Growing Wine Grapes In the Lillooet-Lytton Area, British Columbia" which can be found at http://lillooetbc.ca/business.aspx They have been assigned new numbers for the purpose of this document.

Table 10 Fruit Quality of Harvested Grape Samples from Roshard and Wonderland Vineyards Conducted at the Pacific Agri-Food Research Centre (PARC), Summerland BC – Oct. 24, 2011

| Roshard Vineyard Variety | Berry Weight (gm) | Brix % | pH | Total Acid (mg/l) | Harvest Date |
|---|---|---|---|---|---|
| Cabernet Franc | 0.91 | 18.8 | 3.1 | 8.1 | Oct. 16 |
| Cabernet Sauvignon | 0.76 | 19.1 | 3.2 | 7.4 | Oct. 16 |
| Chancellor | 1.38 | 15.4 | 2.9 | 11.4 | Oct. 16 |
| Chardonnay | 0.83 | 22.4 | 3.3 | 7.0 | Oct. 15 |
| Cocseji Zamatos | 1.10 | 19.6 | 2.9 | 9.1 | Oct. 13 |
| Foch | 1.02 | 22.3 | 3.5 | 9.2 | Oct. 9 |
| Gewurztraminer | 1.06 | 21.0 | 3.1 | 6.8 | Oct. 15 |
| Johannisberg Riesling | 0.68 | 18.4 | 2.9 | 10.5 | Oct. 15 |
| Limberger | 1.17 | 18.8 | 3.1 | 5.9 | Oct. 16 |
| Merlot | 1.20 | 23.4 | 3.7 | 4.9 | Oct. 15 |
| Muscat Ottonel | 0.98 | 18.7 | 3.3 | 6.2 | Oct. 15 |
| Petit Verdot | 0.61 | 17.7 | 3.1 | 12.0 | Oct. 15 |
| Pinot Blanc | 1.01 | 19.3 | 3.2 | 7.0 | Oct. 15 |
| Pinot Gris | 1.11 | 17.9 | 3.3 | 7.1 | Oct. 15 |
| Pinot Noir | 0.92 | 21.4 | 3.5 | 6.5 | Oct. 16 |
| Riesling Muscat | 0.92 | 18.2 | 3.5 | 5.6 | Oct. 16 |
| Sauvignon Blanc | 0.95 | 20.0 | 2.8 | 13.2 | Oct. 15 |
| Syrah | 1.03 | 16.9 | 3.0 | 11.7 | Oct. 16 |
| Tinta Madeira | 1.08 | 19.6 | 3.0 | 8.7 | Oct. 16 |
| Viognier | 1.10 | 20.2 | 3.3 | 8.0 | Oct. 15 |
| Zweigeltrebe | 1.12 | 23.2 | 3.2 | 5.8 | Oct. 13 |
| **Wonderland Farm** | | | | | |
| Cabernet Franc | 0.85 | 16.5 | 3.1 | 11.6 | Oct. 15 |
| Chancellor | 1.14 | 19.2 | 3.1 | 10.6 | Oct. 15 |
| Chardonnay | 1.03 | 18.9 | 3.2 | 10.2 | Oct. 15 |
| Cocseji Zamatos | 1.28 | 19.5 | 3.0 | 8.8 | Oct. 15 |
| Johannisberg Riesling | 0.96 | 18.1 | 2.8 | 14.2 | Oct. 15 |
| Merlot | 0.92 | 21.2 | 3.1 | 9.4 | Oct. 15 |
| Muscat Ottonel | 1.11 | 19.7 | 3.1 | 9.5 | Oct. 15 |
| Riesling Muscat | 0.94 | 14.7 | 3.4 | 4.9 | Oct. 15 |
| Pinot Blanc | 1.29 | 17.9 | 3.2 | 8.1 | Oct. 15 |
| Pinot Noir | 1.04 | 20.0 | 3.2 | 8.8 | Oct. 15 |
| Sauvignon Blanc | 0.96 | 20.1 | 2.9 | 13.7 | Oct. 15 |
| Tinta Madeira | 1.02 | 16.7 | 3.1 | 12.2 | Oct. 15 |

The minimum Brix level required for grapes at harvest for BC Wines of Distinction and BC VQA Wines is 17%. Higher levels are required for late harvest wines. Desired fruit quality varies amongst wineries but generally for table wine consists of 22 % Brix or higher, pH 3.2 to 3.5 and Total Acid 6 to 8 mg/l.

## Table 11 Harvest Dates of Grape Varieties in Test Plantings

| **Roshard Vineyard** | **Harvest Date** | | | | |
|---|---|---|---|---|---|
| **Variety** | **2007** | **2008** | **2009** | **2010** | **2011** |
| Cabernet Franc | Oct. 6 | Oct. 11 | Oct. 2 | Oct. 17 | Oct. 16 |
| Cabernet Sauvignon | Oct. 6 | Oct. 11 | Oct. 2 | Oct. 17 | Oct. 16 |
| Chancellor | Oct. 6 | Oct.17 | Oct. 2 | Oct. 17 | Oct. 16 |
| Chardonnay | Sept. 22 | Oct. 11 | no fruit | Oct. 17 | Oct. 15 |
| Cocseji Zamatos | Sept. 27 | Oct. 11 | Oct. 2 | Oct. 17 | Oct. 13 |
| Foch | Oct.7 | Sept. 27 | Oct. 2 | Oct. 3 | Oct. 9 |
| Gewurztraminer | Sept. 22 | Oct. 4 | no fruit | Oct. 10 | Oct. 15 |
| Johannisburg Riesling | Oct. 7 | Oct.18 | no fruit | Oct. 17 | Oct. 15 |
| Limberger | Oct. 6 | Oct. 11 | Oct. 2 | Oct. 17 | Oct. 16 |
| Merlot | Oct. 6 | Oct. 11 | Oct. 2 | Oct. 17 | Oct. 15 |
| Muscat Ottonel | Sept. 22 | Oct. 11 | no fruit | Oct. 10 | Oct. 15 |
| Petit Verdot | no fruit | no fruit | Oct. 2 | Oct. 17 | Oct. 15 |
| Pinot Blanc | Sept. 26 | Oct. 10 | no fruit | Oct. 17 | Oct. 15 |
| Pinot Gris | Sept. 22 | Oct. 4 | no fruit | Oct. 17 | Oct. 15 |
| Pinot Noir | Sept. 27 | Oct. 11 | Oct. 2 | Oct. 17 | Oct. 16 |
| Riesling Muscat | Sept. 22 | Sept. 28 | no fruit | Oct. 17 | Oct. 16 |
| Sauvignon Blanc | Oct. 6 | Oct. 11 | no fruit | Oct. 17 | Oct. 15 |
| Syrah | Oct. 6 | Oct. 11 | Oct. 2 | Oct. 17 | Oct. 16 |
| Tinta Madeira | Oct. 6 | Oct. 11 | Oct. 2 | Oct. 17 | Oct. 16 |
| Viognier | no fruit | Oct. 12 | no fruit | Oct. 17 | Oct. 15 |
| Zweigeltrebe | Oct. 6 | Oct. 11 | Oct. 2 | Oct. 17 | Oct. 13 |
| **Wonderland Farm** | | | | | |
| Cabernet Franc | no fruit | no fruit | no fruit | no fruit | Oct. 15 |
| Chancellor | " | " | Oct. 5 | Oct.5 | Oct. 15 |
| Chardonnay | " | " | no fruit | Oct. 5 | Oct. 15 |
| Cocseji Zamatos | " | " | no fruit | no fruit | Oct. 15 |
| Johannisburg Riesling | " | " | Sept. 30 | no fruit | Oct. 15 |
| Limberger | " | " | no fruit | Oct. 5 | no fruit |
| Merlot | " | " | no fruit | no fruit | Oct. 15 |
| Muscat Ottonel | " | " | no fruit | Oct. 5 | Oct. 15 |
| Riesling Muscat | " | " | Sept. 11 | Oct. 5 | Oct. 15 |
| Pinot Blanc | " | " | Sept. 30 | no fruit | Oct. 15 |
| Pinot Noir | " | " | Sept. 16 | no fruit | Oct. 15 |
| Sauvignon Blanc | " | " | no fruit | no fruit | Oct. 15 |
| Syrah | " | " | Sept. 11 | no fruit | no fruit |
| Tinta Madeira | " | " | no fruit | no fruit | Oct. 15 |

***Table 11 continued on next page***

## Table 11 Harvest Dates of Grape Varieties in Test Plantings

| **Pietila Vineyard** | **Harvest Date** | | | | |
|---|---|---|---|---|---|
| **Variety** | **2007** | **2008** | **2009** | **2010** | **2011** |
| Cabernet franc | no fruit | no fruit | no fruit | no fruit | Oct. 8 |
| Cabernet Sauvignon | " | Sept. 28 | Sept. 16 | Oct. 5 | no fruit |
| Chardonnay | " | Sept. 28 | no fruit | no fruit | no fruit |
| Cocseji Zamatos | " | Sept. 28 | no fruit | no fruit | Oct. 8 |
| Foch | " | no fruit | no fruit | no fruit | Oct. 8 |
| Gewurztraminer | " | Sept. 28 | no fruit | no fruit | no fruit |
| Johannisberg Riesling | " | Sept. 28 | Sept. 24 | Oct. 5 | Oct. 8 |
| Pinot Blanc | " | Sept. 28 | Sept. 11 | Oct. 5 | Oct. 8 |
| Pinot Noir | " | Sept. 28 | no fruit | no fruit | no fruit |
| Pinot Gris | " | no fruit | no fruit | no fruit | Oct. 8 |
| Syrah | " | Sept. 28 | no fruit | no fruit | Oct. 8 |

## Table 12 Brix of Grape Varieties in Test Plantings

| Roshard Vineyard | Brix | | | | |
|---|---|---|---|---|---|
| **Variety** | **2007** | **2008** | **2009** | **2010** | **2011** |
| Cabernet Franc | 21.9 | 19.4 | 18.2 | 18.3 | 18.8 |
| Cabernet Sauvignon | 22.2 | 20.0 | 17.9 | 19.3 | 19.1 |
| Chancellor | 21.2 | 19.0 | 21.1 | 17.6 | 15.4 |
| Chardonnay | 21.7 | 25.0 | no fruit | 18.7 | 22.4 |
| Cocseji Zamatos | 20.6 | 21.3 | 25.9 | 15.2 | 19.6 |
| Foch | 22.3 | 24.6 | 26.5 | 25.5 | 22.3 |
| Gewurztraminer | 21.7 | 20.1 | no fruit | 21.4 | 21.0 |
| Johannisburg Riesling | 19.1 | 16.2 | no fruit | 17.5 | 18.4 |
| Limberger | 22.8 | 19.1 | 24.3 | 20.1 | 18.8 |
| Merlot | 24.5 | 23.2 | 26.0 | 22.9 | 23.4 |
| Muscat Ottonel | 21.2 | 21 | no fruit | 15.5 | 18.7 |
| Petit Verdot | no fruit | no fruit | 20.5 | 16.4 | 17.7 |
| Pinot Blanc | 18.4 | 20.6 | no fruit | 21.1 | 19.3 |
| Pinot Gris | 20.5 | 18.2 | no fruit | 20.1 | 17.9 |
| Pinot Noir | 20.3 | 21.5 | 16.2 | 18.5 | 21.4 |
| Riesling Muscat | 21.3 | 28.1 | no fruit | 19.4 | 18.2 |
| Sauvignon Blanc | 22.1 | 24.6 | no fruit | 20.7 | 20.0 |
| Syrah | 21.7 | 18.0 | 24.9 | 18.0 | 16.9 |
| Tinta Madeira | 21.1 | 20.8 | 22.4 | 18.8 | 19.6 |
| Viognier | no fruit | 19.5 | no fruit | 15.1 | 20.2 |
| Zweigeltrebe | 19.5 | 20.8 | 19.8 | 18.7 | 23.2 |

***Table 12 continued on next page***

Photo: Fort Berens / Brad Kasselman

## Table 12 Brix of Grape Varieties in Test Plantings

| **Wonderland Farm** | | | **Brix** | | |
|---|---|---|---|---|---|
| **Variety** | **2007** | **2008** | **2009** | **2010** | **2011** |
| Cabernet Franc | no fruit | no fruit | no fruit | no fruit | 16.5 |
| Chancellor | " | " | 23.9 | 15.5 | 19.2 |
| Chardonnay | " | " | no fruit | 17.0 | 18.9 |
| Cocseji Zamatos | " | " | no fruit | no fruit | 19.5 |
| Johannisburg Riesling | " | " | 21.2 | no fruit | 18.1 |
| Limberger | " | " | no fruit | 15.5 | no fruit |
| Merlot | " | " | no fruit | no fruit | 21.2 |
| Muscat Ottonel | " | " | no fruit | 22.0 | 19.7 |
| Riesling Muscat | " | " | 18.6 | 18.0 | 14.7 |
| Pinot Blanc | " | " | 22.4 | no fruit | 17.9 |
| Pinot Noir | " | " | 23.9 | no fruit | 20.0 |
| Sauvignon Blanc | " | " | no fruit | no fruit | 20.1 |
| Syrah | " | " | 16.0 | no fruit | no fruit |
| Tinta Madeira | " | " | no fruit | no fruit | 16.7 |
| **Pietila Vineyard** | | | | | |
| Cabernet Franc | no fruit | 18.0 | no fruit | no fruit | 15.0 |
| Cabernet Sauvignon | " | no fruit | 20.0 | 18.0 | no fruit |
| Chardonnay | " | 20.5 | no fruit | no fruit | 20.0 |
| Cocseji Zamatos | " | 23.6 | no fruit | no fruit | 19.0 |
| Foch | " | no fruit | no fruit | no fruit | 16.5 |
| Gewurztraminer | " | 23.2 | no fruit | no fruit | no fruit |
| Johannisberg Riesling | " | 18.0 | 18.6 | 17.0 | 19.1 |
| Pinot Blanc | " | 19.8 | 21.5 | 19.2 | 19.0 |
| Pinot Noir | " | 22.0 | no fruit | no fruit | no fruit |
| Pinot Gris | " | no fruit | no fruit | no fruit | 21.0 |
| Syrah | " | 20.0 | no fruit | no fruit | 18.5 |

## Table 13 Total Acid of Grape Varieties in Test Plantings

| **Roshard Vineyard** | **Total Acid** | | | | |
|---|---|---|---|---|---|
| **Variety** | **2007** | **2008** | **2009** | **2010** | **2011** |
| Cabernet Franc | 6.8 | 15.8 | 10.2 | 7.0 | 8.1 |
| Cabernet Sauvignon | 5.7 | 12.0 | 7.7 | 7.0 | 7.4 |
| Chancellor | 8.0 | 15.0 | 6.5 | 8.2 | 11.4 |
| Chardonnay | 4.8 | 9.1 | no fruit | 7.4 | 7.0 |
| Cocseji Zamatos | 6.5 | 7.7 | 3.9 | 7.3 | 9.1 |
| Foch | 11.7 | 12.4 | 8.0 | 6.9 | 9.2 |
| Gewurztraminer | 4.6 | 5.3 | no fruit | 3.7 | 6.8 |
| Johannisburg Riesling | 7.7 | 9.2 | no fruit | 8.7 | 10.5 |
| Limberger | 6.0 | 11.1 | 4.2 | 4.9 | 5.9 |
| Merlot | 6.8 | 9.0 | 4.1 | 4.7 | 4.9 |
| Muscat Ottonel | 3.9 | 6.4 | no fruit | 5.7 | 6.2 |
| Petit Verdot | no fruit | no fruit | 10.5 | 10.5 | 12 |
| Pinot Blanc | 5.4 | 7.3 | no fruit | 6.4 | 7.0 |
| Pinot Gris | 5.8 | 7.5 | no fruit | 4.3 | 7.1 |
| Pinot Noir | 4.7 | 10.8 | 10.9 | 6.0 | 6.5 |
| Riesling Muscat | 3.9 | 5.3 | no fruit | 2.4 | 5.6 |
| Sauvignon Blanc | 4.9 | 9.5 | no fruit | 7.1 | 13.2 |
| Syrah | 5.9 | 11.9 | 5.4 | 8.3 | 11.7 |
| Tinta Madeira | 6.9 | 9.6 | 7.2 | 8.1 | 8.7 |
| Viognier | no fruit | 7.9 | no fruit | 8.4 | 8.0 |
| Zweigeltrebe | 5.1 | 7.7 | 7.1 | 4.8 | 5.8 |
| **Wonderland Farm** | | | | | |
| Cabernet Franc | no fruit | no fruit | no fruit | no fruit | 11.6 |
| Chancellor | " | " | 9.0 | " | 10.6 |
| Chardonnay | " | " | no fruit | " | 10.2 |
| Cocseji Zamatos | " | " | no fruit | " | 8.8 |
| Johannisburg Riesling | " | " | 12.5 | " | 14.2 |
| Limberger | " | " | no fruit | " | no fruit |
| Merlot | " | " | no fruit | " | 9.4 |
| Muscat Ottonel | " | " | no fruit | " | 9.5 |
| Riesling Muscat | " | " | 7.3 | " | 4.9 |
| Pinot Blanc | " | " | 7.5 | " | 8.1 |
| Pinot Noir | " | " | 6.8 | " | 8.8 |
| Sauvignon Blanc | " | " | no fruit | " | 13.7 |
| Syrah | " | " | 15.8 | " | no fruit |
| Tinta Madeira | " | " | no fruit | " | 12.2 |

***Table 13 continued on next page***

## Table 13 Total Acid of Grape Varieties in Test Plantings

| **Pietila Vineyard** | **Total Acid** | | | | |
|---|---|---|---|---|---|
| **Variety** | **2007** | **2008** | **2009** | **2010** | **2011** |
| Cabernet Franc | no fruit | no fruit | no fruit | no fruit | n/a |
| Cabernet Sauvignon | " | 11.7 | 13.5 | " | no fruit |
| Cocseji Zamatos | " | 11.2 | no fruit | " | n/a |
| Foch | " | no fruit | no fruit | " | n/a |
| Gewurztraminer | " | 7.1 | no fruit | " | no fruit |
| Johannisberg Riesling | " | 16.7 | 7.3 | " | n/a |
| Pinot Blanc | " | 9.6 | 6.4 | " | n/a |
| Pinot Noir | " | no fruit | no fruit | " | no fruit |
| Pinot Gris | " | no fruit | no fruit | " | n/a |
| Syrah | " | 9.4 | no fruit | " | n/a |

Photo: Fort Berens / Brad Kasselman

## Table 14 pH of Grape Varieties in Test Planting

| Roshard Vineyard | pH | | | | |
|---|---|---|---|---|---|
| **Variety** | **2007** | **2008** | **2009** | **2010** | **2011** |
| Cabernet Franc | 3.2 | 2.8 | 3.1 | 3.3 | 3.1 |
| Cabernet Sauvignon | 3.5 | 3.0 | 3.3 | 3.2 | 3.2 |
| Chancellor | 3.4 | 2.9 | 3.5 | 3.3 | 2.9 |
| Chardonnay | 3.6 | 3.3 | no fruit | 3.6 | 3.3 |
| Cocseji Zamatos | 3.3 | 3.1 | 3.7 | 3.2 | 2.9 |
| Foch | 3.2 | 3.4 | 3.9 | 3.8 | 3.5 |
| Gewurztraminer | 3.6 | 3.4 | no fruit | 3.5 | 3.1 |
| Johannisburg Riesling | 3.1 | 3.0 | no fruit | 3.2 | 2.9 |
| Limberger | 3.3 | 3.0 | 3.4 | 3.4 | 3.1 |
| Merlot | 3.3 | 3.3 | 3.6 | 3.4 | 3.7 |
| Muscat Ottonel | 3.6 | 3.3 | no fruit | 3.3 | 3.3 |

Photo: Fort Berens / Brad Kasselman

| | | | | |
|---|---|---|---|---|
| Cabernet Franc | 157 | 172 | 155 | 161 |
| Cabernet Sauvignon | 154 | 160 | 155 | 156 |
| Chancellor | 157 | 160 | 155 | 157 |
| Chardonnay | 155 | 169 | 155 | 160 |
| Cocseji Zamatos | 154 | 167 | 152 | 158 |
| Foch | 143 | 163 | 153 | 153 |
| Gewurztraminer | 150 | 165 | 160 | 158 |
| Johannisberg Riesling | 154 | 166 | 155 | 158 |
| Limberger | 159 | 172 | 160 | 164 |
| Tinta Madeira | 157 | 167 | 155 | 160 |
| Merlot | 156 | 158 | 154 | 156 |
| Muscat Ottonel | 157 | 159 | 154 | 157 |
| Petit Verdot | | 169 | 155 | 162 |
| Pinot Blanc | 156 | 170 | 154 | 160 |

oto: Fort Berens

## Table 14 pH of Grape Varieties in Test Plantings

| Wonderland | pH | | | | |
|---|---|---|---|---|---|
| **Variety** | **2007** | **2008** | **2009** | **2010** | **2011** |
| Cabernet | no fruit | no fruit | no fruit | no fruit | 3.1 |
| Chancellor | " | " | 3.3 | " | 3.1 |
| Chardonnay | " | " | no fruit | " | 3.2 |
| Cocseji | " | " | no fruit | " | 3.0 |
| Johannisburg | " | " | 3.0 | " | 2.8 |
| Limberger | " | " | no fruit | " | no fruit |
| Merlot | " | " | no fruit | " | 3.1 |
| Muscat | " | " | no fruit | " | 3.1 |
| Riesling | " | " | 3.1 | " | 3.4 |
| Pinot Blanc | " | " | 3.4 | " | 3.2 |
| Pinot Noir | " | " | 3.1 | " | 3.2 |
| Sauvignon | " | " | no fruit | " | 2.9 |
| Syrah | " | " | 2.7 | " | no fruit |
| Tinta Madeira | " | " | no fruit | " | 3.1 |
| **Pietila Vineyard** | | | | | |
| Cabernet | no fruit | no fruit | no fruit | no fruit | n/a |
| Cabernet | " | 2.9 | 2.9 | " | no fruit |
| Cocseji | " | 3.1 | no fruit | " | n/a |
| Foch | " | no fruit | no fruit | " | n/a |
| Gewurztramin | " | 3.4 | no fruit | " | no fruit |
| Johannisberg | " | 3.0 | 3.1 | " | n/a |
| Pinot Blanc | " | 3.1 | 3.1 | " | n/a |
| Pinot Noir | " | no fruit | no fruit | " | no fruit |
| Pinot Gris | " | no fruit | no fruit | " | n/a |
| Syrah | " | 3.3 | no fruit | " | n/a |

| | | | | |
|---|---|---|---|---|
| Pinot Gris | 150 | 169 | 154 | 158 |
| Pinot Noir | 157 | 167 | 155 | 160 |
| Riesling Muscat | 108 | 162 | 155 | 142 |
| Sauvignon Blanc | 157 | 169 | 154 | 160 |
| Syrah | | 158 | 155 | 160 |
| Viognier | 158 | 171 | 159 | 163 |
| Zweigeltrebe | 157 | 172 | 158 | 162 |

* With the exception of Foch, crops were limited. The number of days from budbreak to harvest would be greater for test varieties if crops were not limited.

Table 16 Estimated Percent Vine Maturity in Participating Vineyards October 7, 2011

| Grape Variety | Roshard Vineyard % | Vineyard Pietila Vineyard % | Wonderland Farms % |
|---|---|---|---|
| Cabernet Franc | 90 | | 70 |
| Cabernet Sauvignon | 80 | 90 | 80 |
| Chancellor | 90 | | 90 |
| Chardonnay | 80 | 90 | 70 |
| Göcseji Zamatos | 90 | | 80 |
| Foch | 90 | | |
| Gewurztraminer | 90 | 90 | 70 |
| Johannisberg Riesling | 80 | 90 | 80 |
| Limberger | 90 | | 80 |
| Merlot | 75 | 90 | 70 |
| Muscat Ottonel | 50 | | 80 |
| Petit Verdot | 70 | | |
| Pinot Blanc | 70 | 90 | 80 |
| Pinot Gris | 70 | | 90 |
| Pinot Noir | 70 | 90 | 90 |
| Riesling Muscat | 60 | | 90 |
| Sauvignon Blanc | 50 | | 40 |
| Syrah | 50 | | 60 |
| Tinta Madeira | 60 | | 80 |
| Viognier | 70 | | |
| Zweigeltrebe | 90 | | |

Photo: Fort Berens / Brad Kasselman

Table 17 Frost Free Period (Days), Growing Degree Days (GDD) and Extreme Minimum Winter Temperature at Test Vineyards

| IButton Number, Test Vineyard Site And Project Weather Station | Years 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| **Frost Free Period (Days)** | | | | |
| # 9 Wonderland Farm | 169 | 169 | 190 | 178 |
| # 12 Pietila Vineyard | 166 | 169 | 190 | 178 |
| # 85 Roshard Vineyard | 160 | 167 | 189 | 175 |
| # 87 Ruddock Ranch | 166 | 169 | 189 | 178 |
| Roshard Weather Station | 160 | 169 | 189 | 154 |
| Ruddock Ranch Weather Station | 160 | 162 | 175 | 175 |
| **Growing Degree Days** | | | | |
| # 9 Wonderland Farm | 1320 | 1621 | 1310 | 1278 |
| # 12 Pietila Vineyard | 1306 | 1612 | 1272 | 1231 |
| # 85 Roshard Vineyard | 1268 | 1607 | 1312 | 1273 |
| # 87 Ruddock Ranch | 1269 | 1553 | 1225 | 1166 |
| Roshard Weather Station | 1201 | 1597 | 1286 | 1252 |
| Ruddock Ranch Weather Station | 1218 | 1667 | 1328 | 1306 |
| **Extreme Minimum Temperature** | | | | |
| # 9 Wonderland Farm | -26.5 | -22.4 | -17.5 | -14.2 |
| # 12 Pietila Vineyard | -25.7 | -21.3 | -16.4 | -16.3 |
| # 85 Roshard Vineyard | -24.0 | -19.3 | -16.2 | -15.1 |
| # 87 Ruddock Ranch | -23.9 | -20.0 | -18.1 | -17.0 |
| Roshard Weather Station | -24.8 | -19.9 | -17.1 | -15.7 |
| Ruddock Ranch Weather Station | -24.5 | -20.6 | -18.6 | -17.9 |

* Climate network established Aug. to Dec. 2007. Note: Length of Frost Free Period in 2007 reflects the number of days between the last spring frost at the Lytton Environment Canada climate station and the first date of fall frost at current project data collection sites.

Photo: Fort Berens

# 17. SOURCES

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Prepared by John Vielvoye P. Ag., (March 2012)

"Report on The Agricultural Possibilities Of The Lillooet Area"
E.M. King, O.H. Brownlee And R.E. Wilkinson, (1959).

*List of interviewees:*

Representatives of TRU – Lillooet
Representatives of SD #74 Gold Trail
Representatives of Lillooet Public Library
Representatives of Lillooet Rec Centre
Representatives of Service BC
Representatives of Open Door Group
Representatives of Lillooet Fire Department
Representatives of Lillooet and District Rescue Society
Representatives of Lillooet Hospital and Healthcare Centre
Representatives of Lillooet Dental Clinic
Representatives of Lillooet Friendship Centre Society
Representatives of First Nations and Inuit Health
Representatives of Lillooet Wellness Centre

# APPENDIX 1 – ZONES 5 & 6

## INTRODUCTION TO DATABASE ZONES 5 & 6

According to some locals who have been involved with agriculture in the Lillooet area for a long time:

*"Nearly anything that can be grown elsewhere can be grown in Lillooet and many things that cannot be grown elsewhere can be grown in Lillooet"*

The "database zones 5 & 6" is a spreadsheet examining agricultural opportunities in hardiness zones five and six. It can be found here.

The purpose of this introduction is to give a rough outline of the main findings presented in the spreadsheet.

### CLIMATE[8]

Because of its climate, Lillooet is best suited for the production of heat-loving crops. The average frost free period in Lillooet at Lillooet Weather Station is 186 days. There is very limited rainfall, particularly in the summer months. Moreover because of productive soil and warmer temperatures occurring earlier in the growing season, the region can produce certain types of crops, like sweet corn, earlier than growers in the Fraser Valley.

### THE LAND BASE[8]

The arable acreage is almost entirely limited to a series of benches and fans on both sides of the Fraser River Valley. These benches occur at several levels above the river with the largest acreage over 500 feet above water level. Soil types observed were more similar to those mapped on the east Lillooet benches with Brown and Dark Brown soils dominant. Soil textures range from loam to loamy sand, most frequent texture being sandy loam. Depth of solum varies from a few inches to several feet and is generally underlain by coarse sand and gravels. Stoniness does not appear to be a problem and drainage is generally good. Some small areas of alkali were observed near the toes of several fans but should not constitute a problem with irrigation. The soils are low in organic matter and will respond to nitrogen and phosphorous fertilizers. Cultural practices that incorporate organic matter and increase soil fertility are highly recommended.

### IRRIGATION[8]

Most of the agricultural land in Lillooet and area requires irrigation. There are different irrigation systems suitable to different kinds of crops. Which system is required will depend on

[8] This section draws from the Thompson Nicola Regional District's "Notes on Highland Valley South Cariboo – Identification of Vegetable Production Opportunities in the Thompson River Basin (1986)" ***OR*** "Report on The Agricultural Possibilities Of The Lillooet Area" by E.M. King, O.H. Brownlee And R.E. Wilkinson (1959)

the crop and the cultural processes applied to that crop. For example, systems incorporating plastic mulching typically require drip irrigation.

## TRANSPORTATION[8]

All local markets (Bralorne, Shalalth, Pavilion, Seton Portage, and Gold Bridge) are readily accessible by road. Lillooet is on the CN rail line but currently CN does not handle produce. CP Rail does handle produce but does not pass through Lillooet. As oil prices increase, rail transport may become an option for the distribution of Lillooet produce. If rail transport becomes a reality, there are many large markets north along the railway that are all within eight hours by rail (Clinton, Williams Lake, Quesnel, and Prince George). The northern region is the logical market for Lillooet growers as it cannot be economically serviced by any other growing area. Also the northern climate cannot support the heat-loving crops that flourish in Lillooet, which creates a competitive advantage for Lillooet produce. Buyers in North Central BC have expressed satisfaction with Lillooet produce whenever they have been able to get it. The large markets of Fort St. John and Dawson Creek are only another eight hours distant. The Vancouver market lies within four hours by rail. The entire sea to sky corridor is a potential market for Lillooet produce. Within this corridor are farmers markets, restaurants, and specialty retailers. But Lillooet growers recognize that their "natural" market is to the north, and they will probably develop this market if any volume production takes place. It is important that early on it be determined the actual volume of commodities that can be grown successfully in the Lillooet area, that can be marketed competitively to the north. The major impact of the Coquihalla Highway has been to divert tourist traffic from the Trans-Canada highway thereby reducing the market opportunities of roadside stands and U Pick operations. This effect is compounded in Lillooet since Lillooet is already on an isolated route. Now the main traffic is even further away from Lillooet and so access to buyers from roadside stands on the Trans Canada (an hour away from Lillooet) has decreased. There may be opportunities in Lillooet to use the trucks that serve the local grocery stores to ship locally grown product to Vancouver and Alberta. A number of trucks come in and out of Lillooet in any given week. So there is backhaul potential that may support Lillooet's agricultural development. For information on this possibility speak to Buy-Low Foods manager Bob Sheridan at 250.256.7922.

## ORGANIC

Organic produce is a good option for Lillooet. It commands a higher per unit price. Industry analysts say that organic is the most dynamic and rapidly growing sector of the global food industry. In recent years the sector has seen dramatic growth with consumption outweighing production. This surge in consumption is premised upon a number of consumer values that are becoming increasingly prevalent.

People are concerned about the effects of industrial agriculture. There are many serious problems caused by the widespread use of chemicals, for example. They negatively impact our ecosystem and the health of our bodies. The integrated pest and nutrient management systems found in organic operations can reduce reliance on agrichemical inputs. Education about issues like this is causing a shift in consumer behaviour towards ethical products. An ethical product is one that "promotes the sustainable health and productivity of

the global eco-system soils, plants, water, air, animals, and people." It is defined that organic is the use of "farming practices that may be agroecological, sustainable, or ecological; utilizing natural (non-synthetic) nutrient-cycling processes; exclude or rarely use synthetic pesticides; and sustain or regenerate soil quality" (Badgley, 2006).

Thus, people think that all organic products are produced in a sustainable way and are concerned with the ethical dimensions of agricultural practices. However, large-scale or mainstream organic farming is often carried out in an unsustainable way. There are many examples of this. For example, consumers think that organic farming supports small-scale, independent organic farms growing a wide range of crops in an environmentally sensitive way. In fact, the majority of organic products available in the large grocery chains are produced by large corporations on vast tracts of land. These operations are also monocultural. Monoculture is the agricultural practice of producing or growing a single crop or plant species over a wide area and for a large number of consecutive years. Reliance on monoculture decreases biodiversity within the ecosystem within both plants and animals. And diversity is key to stability in a biological system.

The loss of biodiversity is a fairly serious problem and mainstream organic doesn't treat it that way. So, the perception that a product being designated "organic" automatically makes it ethical is wrong. The result is that there is a niche for ethical organic not only with respect to conventional agriculture but also in relation to mainstream organic. Small-scale organic is actually what people think of when they think of organic. And that is what will occur in Lillooet.

The requirements to be certified organic can be onerous. The process can take up to three years. If you can attest that no prohibited substances have been on the land in the last three years, it will take a minimum of 12 months. Organic farming is knowledge intensive. Consultation with a practiced organic farmer is the best source of information for those interested in organic. The marketing options for organic also warrant significant research. Organic vegetables are subject to the BCVMC regulations. If you produce a BCVMC regulated crop organically there may be fewer processing opportunities than for conventionally produced crops of the same kind. This is simply because there are fewer processing facilities that handle organic. And for those that do so it is usually under a mixed operation—one that does both conventional and organic. And this can be expensive. There is a great deal of introductory information on organic to be found in "database zones 5 & 6" under "a brief analysis of organic in Canada".

Usually if Canadian farmers, processors and traders want to sell a product as organic in a foreign market, they have to certify their product to the standard of the host country. This is no longer required for the USA. Canadian products certified to the Canadian Organic Regime (COR); that is, certified organic by one of the certifying bodies, will no longer have to certify with the U.S. organic regime.

## PROCESSING REGARDING ORGANIC

As stated before, organic agriculture is knowledge intensive. Crop rotation is the single most important practice in an organic vegetable production system. Crop rotation is essentially the practice of following one annual crop with another crop that is as different from the first crop as possible. The use of crop rotation may mean that there are non-overlapping processing methods required at any given time. This will occur when there is more than one crop being

harvested/processed simultaneously and they do not share some portion of their harvesting/processing methods. Determining this for Lillooet will require practice and research (there is significant information regarding organic cropping systems in "database zones 5 & 6" section *"for all crops"* article "Crop Rotation on Organic Farms: A Planning Manual"*)*. Precisely which crops will be rotated is determined by two factors. First there is a constraint based on which crops can be rotated as a matter of fact and how rotation can be optimised to achieve its goals such as insect control. Second, within that framework, a rotation must be selected that produces the most profitable crops in light of operating costs associated with the cultivation and processing of that crop. It may be important to have buildings and equipment that are compatible with the greatest number of crops in an effective rotation for Lillooet and to select crops in a way that economizes capital investment into things like implements, storage, and processing. So, for example, a machine shed can be shared between a multi-enterprise organic farm as may a tractor. However some requirements may be particular to only one or two crops that figure into an effective rotation for Lillooet. For example a building dedicated to onion enterprise is only an onion storage facility. It cannot be used for the other crops that may figure into a desirable rotation of organic crops that includes onions.

It is important to determine what combination of crops produces the greatest profitability with the least amount of capital investment and lowest operating costs. Determining your markets is the first step to doing so. Suppose we are supplying potatoes to restaurants and roadside stands. How does this affect the amount of capital investment into handling and storage facilities as compared to supplying other wholesale markets such as the major grocery chains in the province?

We want minimal processing (due to expense) that is compatible with the greatest number of crops BECAUSE organic is good (desired and profitable) and organic requires crop rotation. So we want a rotation that works (i.e. is effective) yet which can be profitable within the constraints of crop rotation and storage and processing facilities.

## MARKETING[9]

*The most often repeated slogan about commercial agriculture is:*
*YOU MUST HAVE YOUR CROP MARKETED BEFORE YOU PRODUCE IT!*

Vegetable producers in Lillooet area face several marketing and distribution constraints which effectively prohibit small growers from supplying the large metropolitan grocery chains: First, consistent grading and packing is required by wholesalers and all major retailers to allow retailers to plan pricing policies, and to allow appealing displays which can command higher produce prices and/or increased sales volume. So producers will require some form of storage, grading by size and quality, and packaging, before they can be marketed at the retail level. These requirements are relaxed or completely absent for direct to market sales (i.e. roadside stands or farmers markets).

[9] This section draws from the Thompson Nicola Regional District's "Notes on Highland Valley South Cariboo – Identification of Vegetable Production Opportunities in the Thompson River Basin (1986)" ***OR*** "Report on The Agricultural Possibilities Of The Lillooet Area" by E.M. King, O.H. Brownlee And R.E. Wilkinson (1959)

Second, wholesalers will only deal with local growers that can supply significant volumes for an extended period. Wholesalers generally require relatively significant volumes (e.g. 20 to 25 cases a week for a five to six week period) before they will agree to deal with a local grower. Growers selling less than 20 to 25 cases at one time have to deal directly with local retailers or roadside stands which makes the marketing of their produce more difficult. Moreover, these smaller vegetable farms rarely have the equipment to mechanize packaging, which puts them at a disadvantage when competing with other producers supplying the BC market.

Finally: interior producers are scattered throughout the region which often prohibits the consolidation of shipments and the centralizing of packing and grading facilities.
Producers in the Lower Mainland use marketing agencies to provide refrigerating, grading, and packing facilities. There are no such comparable packing and packaging facilities because interior producers are not centralized and are very spread out. Consequently each interior vegetable farm either has its own facilities or, more often than not, has no facilities at all. Moreover, because interior producers are generally isolated from other growers, and are typically located several hours from major markets, the physical distribution of the goods is costly on a per unit basis, except in cases where growers can ship in truckload quantities. In addition to requiring access to grading and packing facilities, growers also require a transportation network and delivery system that meets the needs of wholesalers. Wholesalers and retailers aim at minimizing inventories and they often require deliveries four to five times a week even for non-perishable items. Meeting such delivery schedules can be prohibitive, especially for growers not located on the main highway network.

Because of these marketing and distribution constraints, the interior grower has two options:
Grow a small acreage of a variety of vegetables and fruits. In such cases, growers would operate or cater to roadside stands and supply local grocery stores. At present these small growers cannot generally supply larger buyers in the Kamloops or other large Interior markets because of inconsistent quality and insufficient volume.
OR:
Grow a sizeable acreage of a limited number of products and have onsite storage, handling and grading; plan production to allow efficient delivery; and supply the larger nearby markets. The regional market is too small to justify the required investment in refrigerating, storing, and handling facilities, except perhaps for certain high volume items like storage potatoes, cabbage, carrots, and onions.
Supplying and/or operating roadside stands may offer some opportunities to an entrepreneur-type grower; however the largest potential in terms of economic activity and employment remains with larger scale vegetable production. If you're starting very small, Farmers Markets may be the best sales venue. There are no middlemen. Therefore profit per unit is higher. As you get bigger, you may need to share a piece of the pie with distributors and retailers.
This attached website may provide some ideas:
http://www.agf.gov.bc.ca/ministry/value_chains.html

## SPECIAL MARKET SEGMENTS

A number of products that can be grown in Lillooet are popular within ethnic markets. For example there is strong demand for watermelon, goat, and game fowl among Asian

consumers in the Lower Mainland. Forming good relations with a distributor that serves these Asian markets and providing a high quality product may be all that is required to make inroads in this ethnic market. There is strengthening ethnic demand among other ethnic groups in the Lower Mainland of BC. This segment is also expanding as the popularity of ethnic foods increases among westerners.

There are also opportunities in the halaal and kosher markets. On the Muslim and Jewish holy days, there is an increased demand for goat. The health food sector is another special market segment. Health foods usually command a premium price.

You may also wish to position yourself to serve the aging population who are willing to pay a premium for products that satisfy their unique demands. For example, the elderly are seeking products with strong health benefits such as cranberries or blueberries. They also want natural, organic, and ethical products. Research into this segment will determine many aspects of your agricultural undertaking and help you decide if it is one of the markets you wish to serve. Again the mantra is: Market your Product before You Grow it. This goes beyond merely deciding which market to serve and how do to so but extends into the notion of selling your crop before you grow it.

It is also possible to market a product according to some special or desirable (marketable) aspect of the region in which the product is grown. There are many examples of this approach in your local grocery store. There is a brand of olives that identifies itself as being a product of the Napa valley in California. This is an example of marketing the product by the place it comes from. The question to ask is: what's the marketable element of the town/region? Lillooet tomatoes may gain a reputation that can be extended to other crops grown here simply by making the origin of the product the main marketing angle.

## BRITISH COLUMBIA VEGETABLE MARKETING COMMISSION

In BC many crops are regulated by the Natural Products Marketing (BC) Act found at: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96330_01
The British Columbia Vegetable Marketing Commission ("BCVMC" at http://www.bcveg.com/) administers the act and regulates production, packing, storage, and marketing of products within the three districts in BC. The regulated crops are as follows:
Storage Crops: beets (tops off); Green Cabbage; Red Cabbage; Carrots (tops off); Parsnips; Rutabagas; White (purple top); Turnips; Yellow Onions; Silver Skin Onions; and Potatoes (all types and varieties) when the end use is not for seed.
Greenhouse Crops:
Cucumbers (all types); Tomatoes (all types); Peppers (all types); and Butter Lettuce
Processing Crops:
Peas, Beans, Corn, Broccoli, Brussels Sprouts, Cauliflower, Potatoes (all types and varieties) and Strawberries when the end use is manufacture/processing

If you are producing one of the crops from the list above, you must be licensed by the BCVMC and market through a designated agency according to a quota system. The BCVMC doesn't regulate the production of a product; they regulate the marketing of a product. A list of BCVMC marketing agencies can be found at: http://www.bcveg.com/agency.asp

The only case in which you are not required to market through one of the above agencies is if you are direct-marketing (outside of established agency, i.e. at a roadside or farmer's markets). If you do market direct to consumer you must still license with the BCVMC. There are certain conditions or constraints that guide direct- to-market sales. Basically, a person who grows a regulated crop is able to sell small or consumer size volumes at a farmer's markets or a roadside stand up to a daily weight limit. Also, if you market at a farmer's market or a roadside stand, you must market only your own production. You can't get your neighbouring potato farmers and combine them and go to market. It is just your own production.

What the BCVMC is trying to do is have a controlled system so that there aren't many sellers out there. Many sellers typically end up depressing price. SO we have as best as possible set out limitations on the system. And our biggest limitation is that producers are expected to market through an agency.

For those looking to bridge into marketing a regulated crop through a designated agency from direct to consumer sales there is a BCVMC provision called the "New Entrant Program Policy", which can be found at:
http://www.bcveg.com/docs/Storage%20Crops%20New%20Entrant%20Program%20Policy%20-%20Incl.%20Application%20Form%20-%20January%2010,%202012.pdf
It serves as a way to enter into the orderly marketing systems for new entrants. It still requires you to market through an agency BUT if somebody was to market in a non-agency way (roadside stand or farmers market) what needs to happen is the person, as part of a new entrant program, puts together a marketing plan or a business plan and puts that in front of the BCVMC so they can make a decision whether they are going to allot or assign some quota to the applicant.

Any new producer under the BCVMC must be mindful of an on-farm foods safety program. To get more info about on-farm food safety programs visit:
http://www.canadagap.ca/

If you are going to ship to a marketing agency, you have to have on-farm food safety. As a new entrant, it takes time to learn the ropes regarding on-farm food safety. But the sooner you are aware of food safety needs, the sooner you can get it implemented on the farm. Having an on-farm food safety program goes toward certification and auditing of the farm so that the first receiver of the product, which is typically the agency, knows that they are getting product from a farm that has an on-farm food safety program. If you are going to farmers markets or your own roadside stand, you're giving assurance to your customers that you're food safe as well.

*Useful Websites regarding the BCVMC:*

Okanagan Grown Produce Limited
Responsible for sales for or owners / producers in the BC interior
http://www.ivma.info/newsite/about.htm
Okanagan Grown Produce Limited regulated crops:
Beets, Green Cabbage, Red Cabbage, Carrots, Onions, Parsnips, Potatoes, Rutabagas, Greenhouse: cukes, tomatoes, peppers.

"Natural Products Marketing (BC) Act":
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96330_01
Natural Products Marketing (BC) Act –British Columbia Vegetable Scheme":
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/20_96_80

## STORAGE CROPS

Many long term storage crops that can be grown in Lillooet are regulated by the BC Vegetable Marketing Commission (BCVMC). For further information about regulation see the section in this document titled **BCVMC**. Regulation may make entry into some markets difficult. For example, regulation prevents direct dealings with some of the major markets that are logical choices for Lillooet, such as the restaurants between Pemberton and Squamish. Restaurants can only be accessed through a BCVMC marketing agency by licensed producers. So should a Lillooet operation be licensed it must compete with all the other BCVMC licensed operations in the province for access to that market. There are benefits of marketing through BCVMC agencies. However, as developed earlier, Lillooet operations may not be able to meet the demands of these marketing agencies and so may not be able to enjoy the benefits connected to being licensed by the BCVMC. This is not necessarily the case as we shall see below.

The greatest expenses associated with any commercial agriculture operation are washing, grading, packaging, and marketing. These are labour and capital intensive operations. To make intensive processing work requires a scale of production and subsequent market access that cannot be fed by the limited land in Lillooet. Competition from established and highly organized operations in California and Mexico control this market.

But most all crops require at least some processing and cooling facilities. Lillooet may find success at a larger scale in long term storage crops which require relatively little processing and can be marketed over a larger period of time. This allows for off-season sales and consistent market supply (a major requirement for larger markets throughout the region). The idea is to get more than one crop that requires a fridge and share it. For example, carrots, beets, radishes, parsnips, and turnips and rutabagas share storage conditions. These crops are also similar in terms of handling requirements. This may mean that processing and machinery may be used for more than one root crop. This optimization will require research to achieve.

Once you make a decision to grow or test a crop, consider beginning with a small-scale test plot. This will provide critical information on production variables, product quality and product-specific marketability (e.g. test marketing) for you to evaluate, at the same time as providing important fiscal information for your business plan. Determine if there are good agriculture practices guidelines, on-farm food safety programs, or other recognized standards which you as a producer should follow and which markets demand. You as the producer will likely need to find, create and/or develop markets for your own products. Attending workshops and accessing materials aimed at developing markets and marketing skills will help you determine: 1) if product marketing is something you enjoy; 2) if you are willing or able to invest the substantial time and effort required; or, 3) if you need to access the services of a professional marketer as part of your business team.

## TABLE POTATO (Solanum tuberosum)

Because of their storability potatoes can be marketed year round. Also potatoes are easy to handle. As such they are an example of a crop that can compete within larger nearby markets (rather than direct to market sales). Of course, the precise nature of the BCVMC marketing/processing options available to the potato will determine what kind of handling (wash, sort, etc.) is required and therefore what kind of capital investment is needed and into which areas. In fact this is true of all the long term storage crops. Potatoes have a very wide range of uses. A large portion of commercial potato output is for chipping. Potatoes can also be processed into oven-ready frozen potato products such as those produced by McCain. There really is quite a wide range of such products. For example potatoes can be processed into frozen french fries or hash browns. For examples of other processed potato products please see:

http://www.mccain.ca/en-ca/Pages/default.aspx

Potatoes can be sold whole to restaurants to make fresh fries. Potatoes can be dehydrated and sold for a wide range of culinary uses. Potatoes can be incorporated into canned soups and stews. Potato starch and its derivatives have many uses: noodles, wine gums, cocktail nuts, hot dogs, sausages, bakery cream, instant soups and sauces. Potato starch also has industrial applications such as wallpaper adhesive and textile finishing. Potatoes are used in the distillation of vodka, as livestock feed, or as seed. But again: the direct to market sales of fresh product is the most likely road to success

## TURNIP (Brassica rapa)

Turnip is another long term storage crop that may be a good option for Lillooet. Root crops that are cold-hardy such as turnip or rutabaga can be grown in zones 5 & 6 in early spring or late summer. Turnip is usually used fresh. Its greens are also edible. Turnips have a long storage life. Quality heirloom variety root crops have been good sellers at farmers markets. There is a strong ethnic market for turnip and rutabagas. Growers with access to approved kitchen facilities can process some root crops for value-added products. Wholesale opportunities for root crops are few. It can be forage for livestock

## ONIONS (Allium cepa) (other Allium genus crops = garlic, chives, shallots, leaks)

Onions require curing in a dry, well-ventilated location for two to four weeks. Proper drying is essential to the successful marketing of onions. To be transported or stored for any period of time, onions must be thoroughly dried and completely dormant. There is no alternative to complete drying and proper post-harvest handling. Although not necessary, onions can be artificially dried in seven to ten days. Onions may be stored for several months in a refrigerated storage facility.

However this storage facility cannot be used simultaneously by many other crops. Onions should be transported and stored separately from other kinds of produce because many type of fruits and vegetables will readily absorb the odour of onions. Well-dried onions will also draw moisture from fresh vegetables. However, in an organic rotation including onions, onions cannot be grown on the same site more than once in five years. So the storage facility may only

need to handle onions one year in five and in the other years the same fridge can be used for other crops.

There are many traditional methods of holding onions for transportation and/or storage that do not fit in conventional packaging classifications. These include 'string of onions', shelves, and loose bulk. In 'string of onions' packing, the bulbs are tied together by means of their tops to produce a bunch of bulbs that is also a form of packaging. This is suitable for transporting a small quantity of crop, and during storage, the bunches are hung from the roof. This is also an attractive way of displaying onions. Onions are also stored loose bulk (instead of containers) by heaping the bulbs directly on the floor. Bulk storage permits maximum utilization of store space and uniform aeration is easier to achieve than in stacks of bags. These forms of storage may be well suited to direct to market sales.

Onions have a wide range of culinary applications. The main processing markets are for onion rings and frozen chopped onions. Onions can also be used in canning or pickling and oil extraction. They can also be dehydrated and incorporated into spice mixes and condiments. Fresh onion preparations include soups, stews, sauces, and stir-fries, additions to pickles, relishes.

## GARLIC (Allium sativum)

Another member of the Allium genus is Garlic (Allium sativum). Fall plantings of garlic in mid to late September will begin to grow in early spring and are harvested in late July or early August. Garlic is another example of a long term storage crop that requires limited processing and packaging. The ideal storage temperature for garlic 0 C. Garlic will store for 5 to 8 months under these conditions. Garlic is not a BCVMC-regulated commodity. So licensing is not required for sale in any market. This opens up the possibility of supplying high-grade organic garlic to the restaurants readily accessible between Pemberton and Vancouver as well as larger nearby markets. Organically produced garlic may also be in high demand at farmer's markets. Cheap imported bulk garlic has kept commercial prices of garlic very low. This may favour direct to consumer markets focusing on high quality organic garlic. In addition to fresh sales, most garlic growers find that value-added production is desirable. Pickled garlic, braided garlic, and garlic flavoured oils are the most popular. And there is a very strong ethnic market for garlic.

## HOT PEPPER (AKA CHILE PEPPER)

Hot pepper may be another good choice for Lillooet. Hot peppers are easy to grow and are largely pest and disease resistant. This limits the need for expensive cultural practices such as applying herbicide. In terms of handling, hot peppers mainly require refrigeration to increase shelf life. Peppers are primarily grown for fresh sales although some are harvested for processing. The main markets for fresh sales are roadside stands, local wholesalers, retailers, and farmer's markets. Hot pepper is an example of a product that is in high demand by ethnic markets (mainly Cajun and Asian). This demand is also bolstered by the increased consumption of hot or spicy foods by westerners. So it may find a market in ethnic restaurants. Ethnic grocers may also be interested carrying Lillooet-grown hot pepper. Cultivar selection is a critical decision for commercial pepper growers. Genetics determine fruit size, colour, shape,

flavour, and capsaicin levels (determines heat of peppers). It is important that growers select well-adapted varieties that have the qualities in demand for the intended market. Most (but not all) types of hot and specialty peppers can be grown using the same technique. Value added opportunities include dried whole peppers or pepper flakes, sauces, jellies, jams, salsa, spice mixes, and as an additive in cheese or peanut butter. There are many opportunities for value-added products. Lillooet's best opportunity may be in providing hot pepper in a form that meets the needs of those who are doing the value-added stuff.

## BELL PEPPER (Capsicum annuum)

Bell pepper is a BCVMC-regulated crop only if it is grown in a greenhouse. Bell pepper is a good crop for small-scale and part time farming operations; various markets exist for growers and small acreage farms (less than five acre). Peppers require cooling after harvest to remove field heat and to preserve quality and increase shelf life. There is a really strong market for fresh coloured bell peppers. Processing options for bell pepper includes dried flakes and pickled.

## HOPS (Humulus lupulus)

Hops are primarily used as a flavour and stability agent in beer. There is an increasing market of small local breweries producing specialty beers. Therefore supplying to microbreweries is a growing opportunity. For example there are microbreweries in Pemberton which would be a good market for Lillooet hops. Craft brewers tend to use a high hopping ratio and pay more for hops. And many microbrewers are seeking a direct relationship with their hops growers. So there is a strong niche market for high quality hops of different varieties in microbreweries. Other markets for Lillooet hops can be brewer supply stores, independent hop suppliers, and organic herb stores.

The major market for hops is in the US Pacific Northwest where the concentration of brewers is eight times that of BC. And most of these brewers have committed to at least one organic beer as a part of their lineup. Interest in organic brewing is increasing. Also, there is an increasing demand for hops grown locally and in sustainable agricultural practices. As such, it may be worthwhile to focus on premium organic hops and charge a premium price. U-brews and homebrew supply stores are increasingly seeking organic. Currently there is no commercial organic hops production in Canada.

However, microbrewers require their hops to be pelletized, chemically analysed, and vacuum sealed in barrier bags. So there is significant investment into developing a small-scale processing plant to meet these needs. Without this service, the market shrinks to the group of people willing to use dry whole flowers. For more information about the pelletizing of hops and different methods for doing so, please see the "Hops" section in "database zones 5 & 6".

## APPLES

Any apple that can be grown elsewhere in Canada can be grown here in Lillooet. BC cannot out-produce the competition nor can it compete on price. So potential for the BC fruit market lies in differentiating its product to secure niche markets. Apples have a very wide

range of uses. Apples can be processed into apple sauce, apple juice, pie filling, cider and vinegar, fruit leather, apple wine, and baby food.

## FRUIT WINES

Opportunities are also identified in fruit wine operations. Fruit wines can be produced from herbs (such as dandelion,) and non-grape fruits (strawberries, grapes, cranberry, blueberries, huckleberry, gooseberry, and Saskatoon, and plum). Cider is usually made from apple juice but can also be made from the juice of peaches and other fruits. Wine is constantly increasing in popularity. Statistics show that per capita consumption has seen a steady increase since 1996. A good first step into the wine industry may be a cottage winery. A cottage winery is characterized by the production of wine primarily for sale at the farm site. There are many benefits to cottage wineries. They establish a link between the wine industry and the agriculture tourism industry. As a result they draw from two potential markets rather than just one. Cottage wineries play on an "above average" interest in wine and cuisine related tourist activities. The target population of cottage wineries is the affluent, city dweller segment. The winery can be the premise for the sale of other high quality, naturally derived farm products such as artisan cheeses, organic meats, preserves, beauty products, and so on. A farm-based winery may also be complemented by direct-to-market internet sales.

## HEMP

The "database zones 5 & 6" also examines the cultivation of hemp in hardiness zones three and four. Hemp can be processed into a wide variety of products. Hemp fibers are considered a superior fiber for use in so-called "bio-composites". Bio-composites incorporate resin in order to produce moulded plastics. Hemp fiber is also compatible with injection moulding. As such, hemp fibres have a wide range of automotive applications. For example hemp fiber can be used for the fabrication of car door panels. Hemp fiber can also be used to make insulation for houses. Hemp has other building applications as well such as fiberboard and plaster board. Applications in green building technologies are an emerging market for hemp fiber products. Fibers may also be used in the production of paper products, landscaping products, and as a superior choice in animal bedding. There is also niche market potential in apparel and hemp textiles. Hemp seed oil has a wide variety of uses. It can be used as a raw material in the production of biodiesel. It can also be used in soaps and cosmetics—oils, lotions, moisturizers, shampoos. Hemp seed oil is also edible. Being more nutritious than other oils, it is ideal as an ingredient in oil based foods such as salad dressings. Hemp oil can also be used as a biomass fuel. Hemp hearts are an exceptionally nutritious food and can be incorporated into a number of health food products or eaten on their own. The seed is also excellent animal food.

Hemp requires little pest and disease management. This means that hemp requires very little herbicides and pesticides. As a result hemp has little environmental impact. Because hemp can grow on infertile soils, the plant needs little fertilizers or high-grade inputs to flourish. This coupled with the high yield of hemp plants makes it very cost effective to grow.

## DATABASE ZONES 5 & 6

The “database zones 5 & 6” can be found here

# APPENDIX 2 – ZONES 3 & 4

## INTRODUCTION TO DATABASE ZONES 3 & 4

The “database zones 3 & 4” is a spreadsheet examining agricultural opportunities in hardiness zones three and four. It can be found here.

The main focus of the “database zones 3 & 4” is agroforestry. Agroforestry is a land management approach that deliberately combines the production of trees with other crops/livestock. The method is to manage for crops and livestock within the natural setting of the forest. Some mainstream vegetable crops can be incorporated into an agroforest. However the majority of crops that integrate are known as specialty crops. So the focus of “database zones 3 & 4” is the specialty crops that can be grown in zone three and four forests within the context of agroforestry. This focus on specialty crops means that the products derived from the crops and the markets for those products are non-mainstream or “niche”. This presents a unique perspective on agriculture—one that focuses on naturally derived products and a sustainable approach to agriculture.

Regarding its sustainability, agroforestry falls in line with how most people think of organic agriculture. People think that organic farming “promotes the sustainable health and productivity of the global eco-system soils, plants, water, air, animals, and people”. This ethical dimension of organic is one of the main reasons people seek organic products. The organic products found in large grocery chains, however, do not take the ethical dimension of organic very seriously. Mainstream organic adopts and employs many of the same methods that led people seek organic in the first place. Agroforestry, by blending agriculture and forestry with conservation practices, strives to optimize economic, environmental, and social benefits. Consequently there is a niche within organic. Those crops and practices that respect the ethical dimension of organic can be marketed as an alternative not only to conventionally produced products but also to mainstream organic itself. This becomes a niche as people increasingly are concerned with the welfare of the planet.

There is a wide range of non-timber forest crops that can be incorporated into an agroforest operation. Consequently agroforest products can tap into a wide range of markets. Agroforestry can manage for wild edible mushrooms, florals and greenery, medicinals and pharmaceuticals, wild berries and fruit, herbs and vegetables, essential oils, fibre, landscaping/reclamation products, and craft products. Within each of these categories there

are further divisions to be made. To illustrate how diverse the markets can be for each category we will focus on the products related to essential oils.

A plant's essential oil can be used as an aromatic, a cosmetic (perfumes, oils), a food, and a medicine. And each plant has different characteristics in each of these applications. Hyssop has different health benefits than fireweed, for example. Health care products that make use of natural essential oils are considered neutraceuticals. A neutraceutical is a food or food product that provides health and medical benefits including the prevention and treatment of disease. The spreadsheet identifies several species of plant that can be used to make neutraceuticals. Neutraceuticals are increasing in popularity as people turn to alternative forms of health care. To give an idea of the value of the neutraceutical market, all of the major pharmaceutical companies commit major resources to the discovery of new neutraceuticals. There is significant overlap between neutraceuticals and folk/traditional medicines. Many of the crops identified in "database zones 3 & 4" that are used in neutraceuticals have also been used for thousands of years in traditional systems of medicine. For some, a plant's status as a folk medicine is a very strong recommendation for its medicinal value. And for those who require scientific evidence, there is continued scientific evaluation of and subsequent support for the health claims made by natural health products. The "database zones 3 & 4" delves into the different health claims made by some agroforest crops.

The other possible markets for the agrocrops in "database zones 3 & 4" are equally as diverse as the essential oils applications. For example wild mushrooms can be dried, canned, pickled and made into a powder or tea.

Despite the wide range of uses of agroforest crops, they are still considered to be "specialty" or "alternate crops". Specialty crops are not generally considered part of mainstream agriculture. So, by definition, specialty crops are not mainstream marketable. There are generally few marketing structures in place for specialty crops, and there may be relatively little information regarding crop management. That is, the majority of markets for specialty or alternate crops are direct-to-consumer (on-farm sales, roadside stands, farmer's markets, internet sales). Nevertheless, understanding your market must be prior to any agricultural undertaking. This process can be facilitated by contacting association(s) to expand your access to information resources and increase your knowledge base. If market studies relevant to your crop of interest already exist, you may be able to access them through an industry association (e.g. BC Herb Growers, The Associated Ginseng Growers of BC, etc.) as associations and organizations frequently participate in or conduct various studies. These types of studies provide valuable resources as you conduct your own market assessment and marketing plan.

Once you make a decision to grow or test a crop, consider beginning with a small-scale test plot. This will provide critical information on production variables, product quality and product-specific marketability (e.g. test marketing) for you to evaluate, at the same time as providing important fiscal information for your business plan. Determine if there are good agriculture practices guidelines, on-farm food safety programs, or other recognized standards which you as a producer should follow and which markets demand. You as the producer will likely need to find, create and/or develop markets for your own products. Attending workshops and accessing materials aimed at developing markets and marketing skills will help you determine: 1) if product marketing is something you enjoy; 2) if you are willing or able to

invest the substantial time and effort required; or, 3) if you need to access the services of a professional marketer as part of your business team.

A good start that comes prior to thinking about the marketing of your crop is to identify the steps you must consider prior to planting it. The following two links will be helpful in deciding which crops to grow by taking you step-by-step through the main issues one will face when deciding to grow a specialty crop. They will help you to identify the steps you need to take in order to be successful.

http://www.al.gov.bc.ca/speccrop/publications/documents/evaluate_part1.pdf
http://www.al.gov.bc.ca/speccrop/publications/documents/evaluate_part2.pdf

Another source of helpful information can be found at:

http://www.agf.gov.bc.ca/ministry/value_chains.html#branding

This site looks at Value Chains which are "market focused collaborations that work together to develop a product the buyer wants while achieving efficiencies along the supply chain to minimize costs and maximize profits." You can find information like a list of all of B.C.'s farmer markets. This will be useful for marketing products that are considered specialty or alternate.

Livestock can be readily integrated into agroforestry operations. The meat products derived from such livestock can fill a number of emerging niches in the marketplace. Animal rights and animal welfare is a growing concern among consumers. Wholesale meat producers seem to have little concern for the welfare and potential rights of their livestock. One need only search the internet to be apprised of this fact. Inhumane treatment of animals has real impacts on the psychological and physical well-being of those animals. For many that is enough to cause concern. However it is becoming increasingly evident that the practices of large scale livestock operations directly affect the health of consumers. Industrial agriculture uses huge amounts of water, energy, and industrial chemicals; increasing pollution in the arable land, usable water and atmosphere. Herbicides, insecticides, fertilizers, and animal waste products are accumulating in ground and service waters. Not to mention that meat derived from an industrial operation may itself harm humans. Increased awareness of these facts should lead to changes in consumer behaviour.

Livestock operations situated within an agroforestry context have many advantages over industrial farming practices. First, the agroforest animal is not subject to any of the troubling conditions that define industrial agriculture operations. If there are health impacts on consumers due to these industrial practices (which seems reasonable to believe), agro livestock will have none of them. People who want to eat meat that is treated ethically will be satisfied by the meat from the agroforest. Agro livestock will have greater diversity in their diet and a better diet in general. Providing forage for livestock within the agroforest means that prime arable land can be used for crops other than livestock feed.

The impact on the environment caused by industrial agriculture will be lessened significantly if the output of industrial farming is dispersed over smaller, independent livestock operations. Dividing the output of industrial farms among smaller, independent and well-dispersed farms has two additional benefits that are currently popular with consumers. First, having agricultural operations dispersed throughout a large area (such as BC) rather than being concentrated at one location a great distance away (USA) enables people to live by the 100-mile-diet without having to sacrifice eating the foods they love. There are a few benefits of eating according to the 100-mile-diet. First, observing the diet will lessen the environmental

impacts associated with transporting food great distances and the other energy costs associated with doing so. Second the 100-mile-diet entails increased independence from industrial scale operations and their many negative consequences. Finally, sourcing food locally supports the local economy. Developing local food supplies will also increase food security. If we are completely reliant on industrial agriculture for a large majority of our food, the collapse of that system entails a collapse in the regular supply of food. This may be a contingency that warrants some consideration. Insofar as local food supplies strengthen, the collapse of industrial agriculture fails to be relevant.

So far the focus has been non-timber forest products that can be cultivated in an agroforest. But, many different tree species can be incorporated into an agroforest. And, for the most part, they are very diverse in their commercial applications. Timber products include (but are not limited to) Christmas trees, firewood, building supplies, pulps, hardwoods, nuts, tree fruits, birch tree syrup, particle board, veneer, shingles, craft products, oils, musical instruments. This list goes on.

Agroforest systems can be quite complex and require significant study and research to be successful. To start you thinking about agroforestry consult "A Guide to Agroforestry in BC" which can be found at:
http://www.woodlot.bc.ca/swp/Downloads/files/AgroforestryGuide.pdf

So far there has been little information about the processing of agroforestry crops into consumer products. Processing is likely to occur on a small-scale basis. There may not be established harvesting and processing methods. Harvesting and processing will be, for that reason, labour intensive and lacking automation. Also there may be non-overlapping processing methods required at any given time. This will occur when there is more than one crop being harvested/processed and they do not share some portion of their harvesting/processing methods. This diversity in processing coupled with its small scale may mean that processing will be time-consuming and labour intensive. However the market value of some agroforest products can be so high that even small amounts of the product can be profitable. Essential oils can fall into this category as well as fireweed honey among others.

Aside from information about agroforestry and agroforestry compatible crops/livestock, the "database zones 3 & 4" includes significant information about the cultivation of Cole crops in hardiness zones three and four. Cole crops include cabbage, broccoli, cauliflower, brussel's sprouts, and kohlrabi. Cole crops allow for a wide variety of value-added products. For example cabbage can be processed into coleslaw or turned into sauerkraut. Broccoli and cauliflower can be processed into frozen prepared vegetable mixes. Brussel's sprouts have very strong sales during thanksgiving, Christmas, and Easter. The feasibility of a large scale operation that includes handling, grading, storing, packaging, and adding value can only be decided after significant market research. Outside of the wholesale market streams and the large scale value-added markets the main option is direct to consumer markets. These include roadside stands, farmer's markets, and independent grocers. The aim will be to keep processing costs at a minimum while maintaining profitability. The exact set of conditions which achieves this goal must be researched independently.

Since some Cole crops are regulated by the British Columbia Vegetable Marketing Commission, it is worthwhile to discuss the marketing of regulated crops. It should be noted that all regulated crops north of the 53rd parallel (Quesnel) are exempted.

In BC many crops are regulated by the Natural Products Marketing (BC) Act found at: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96330_01
The British Columbia Vegetable Marketing Commission ("BCVMC" at http://www.bcveg.com/) administers the act and regulates production, packing, storage, and marketing of products within the three districts in BC. The regulated crops are as follows:

Storage Crops:

beets (tops off); Green Cabbage; Red Cabbage; Carrots (tops off); Parsnips; Rutabagas; White (purple top); Turnips; Yellow Onions; Silver Skin Onions; and Potatoes (all types and varieties) when the end use is not for seed.

Greenhouse Crops:

Cucumbers (all types); Tomatoes (all types); Peppers (all types); and Butter Lettuce

Processing Crops:

Peas, Beans, Corn, Broccoli, Brussels Sprouts, Cauliflower, Potatoes (all types and varieties) and Strawberries when the end use is manufacture/processing

If you are producing one of the crops from the list above, you must be licensed by the BCVMC and market through a designated agency according to a quota system. The BCVMC doesn't regulate the production of a product; they regulate the marketing of a product.

A list of BCVMC marketing agencies can be found at: http://www.bcveg.com/agency.asp
The only case in which you are not required to market through one of the above agencies is if you are direct-marketing (outside of established agency, i.e. at a roadside or farmer's markets). If you do market direct to consumer you must still license with the BCVMC. There are certain conditions or constraints that guide direct- to-market sales. Basically, a person who grows a regulated crop is able to sell small or consumer size volumes at a farmer's markets or a roadside stand up to a daily weight limit. Also, if you market at a farmer's market or a roadside stand, you must market only your own production. You can't get your neighbouring potato farmers and combine them and go to market. It is just your own production

What the BCVMC is trying to do is have a controlled system so that there aren't many sellers out there. Many sellers typically end up depressing price. SO we have as best as possible set out limitations on the system. And our biggest limitation is that producers are expected to market through an agency.

For those looking to bridge into marketing a regulated crop through a designated agency from direct to consumer sales there is a BCVMC provision called the "New Entrant Program Policy", which can be found at:
http://www.bcveg.com/docs/Storage%20Crops%20New%20Entrant%20Program%20Policy%20-%20Incl.%20Application%20Form%20-%20January%2010,%202012.pdf
It serves as a way to enter into the orderly marketing systems for new entrants. It still requires you to market through an agency BUT if somebody was to market in a non-agency way (roadside stand or farmers market) what needs to happen is the person puts as part of a new entrant program put together a marketing plan or a business plan and put that in front of the BCVMC so we can make a decision whether we are going to allot or assign some quota to the applicant.

Any new producer under the BCVMC must be mindful of an on-farm foods safety program.

To get more info about on-farm food safety programs visit http://www.canadagap.ca/ If you are going to ship to a marketing agency, you have to have on-farm food safety. As a new entrant, it takes time to learn the ropes regarding on-farm food safety. But the sooner you are aware of food safety needs, the sooner you can get it implemented on the farm. Having an on-farm food safety program goes toward certification and auditing of the farm so that the first receiver of the product, which is typically the agency, knows that they are getting product from a farm that has an on-farm food safety program.
If you are going to farmers markets or your own roadside stand, you're giving assurance to your customers that you're food safe as well.

*Useful Websites regarding the BCVMC:*

Okanagan Grown Produce Limited
Responsible for sales for or owners / producers in the BC interior
http://www.ivma.info/newsite/about.htm

"Natural Products Marketing (BC) Act":
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96330_01

Natural Products Marketing (BC) Act –British Columbia Vegetable Scheme":
http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/20_96_80

The "database zones 3 & 4" also examines the cultivation of hemp in hardiness zones three and four. Hemp can be processed into a wide variety of products. Hemp fibers are considered a superior fiber for use in so-called "bio-composites". Bio-composites incorporate resin in order to produce moulded plastics. Hemp fiber is also compatible with injection moulding. As such, hemp fibres have a wide range of automotive applications. For example hemp fiber can be used for the fabrication of car door panels. Hemp fiber can also be used to make insulation for houses. Hemp has other building applications as well such as fiberboard and plaster board. Applications in green building technologies are an emerging market for hemp fiber products. Fibers may also be used in the production of paper products, landscaping products, and as a superior choice in animal bedding. There is also niche market potential in apparel and hemp textiles. Hemp seed oil has a wide variety of uses. It can be used as a raw material in the production of biodiesel. It can also be used in soaps and cosmetics—oils, lotions, moisturizers, shampoos. Hemp seed oil is also edible. Being more nutritious than other oils, it is ideal as an ingredient in oil based foods such as salad dressings. Hemp oil can also be used as a biomass fuel. Hemp hearts are an exceptionally nutritious food and can be incorporated into a number of health food products or eaten on their own. The seed is also excellent animal food.

Hemp requires little pest and disease management. This means that hemp requires very little herbicides and pesticides. As a result hemp has little environmental impact. Because hemp can grow on infertile soils, the plant needs little fertilizers or high-grade inputs to flourish. This coupled with the high yield of hemp plants makes it very cost effective to grow.

Opportunities are also identified in fruit wine operations. Fruit wines can be produced from herbs (such as dandelion,) and non-grape fruits (strawberries, grapes, cranberry, blueberries, huckleberry, gooseberry, and saskatoon). Cider is usually made from apple juice but can also be made from the juice of peaches and other fruits. Wine is constantly increasing in popularity. Statistics show that per capita consumption has seen a steady increase since 1996. A good first step into the wine industry may be a cottage winery. A cottage winery is characterized by the production of wine primarily for sale at the farm site. There are many benefits to cottage wineries. They establish a link between the wine industry and the agriculture tourism industry. As a result they draw from two potential markets rather than just one. Cottage wineries play on an "above average" interest in wine and cuisine related tourist activities. The target population of cottage wineries is the affluent, city dweller segment. The winery can be the premise for the sale of other high quality, naturally derived farm products such as artisan cheeses, organic meats, preserves, beauty products, and so on. A farm-based winery may also be complemented by direct-to-market internet sales.

## DATABASE ZONES 3 & 4

The "database zones 3 & 4" can be found here