



Comox Valley

REGIONAL GROWTH STRATEGY

Understanding Our Choices

Comprehensive Background Paper – June 2009

URBAN STRATEGIES INC.

ECOPLAN INTERNATIONAL INC.

EAR TO THE GROUND PLANNING





Comox Valley

REGIONAL GROWTH STRATEGY

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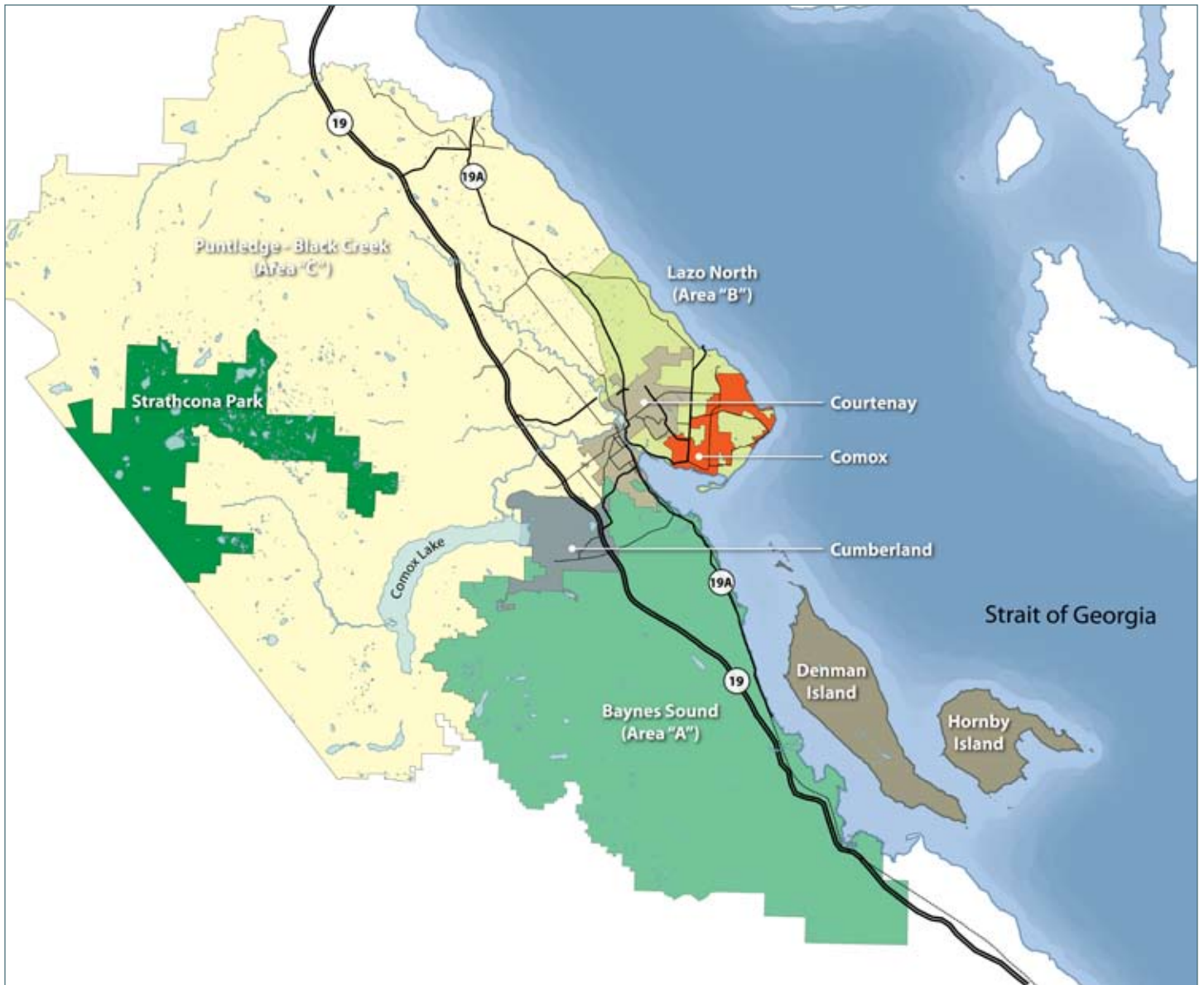
The RGS Planning Team wishes to thank the many individuals and organizations that helped in the preparation of this report. While it is impossible to personally name each and every person and organization, this report would not have been possible were it not for: the time taken by the four CAOs and four planning directors for each of the local governments in providing us direction on the RGS study; the various local government staff that provided us with background information, data and reports; members of our Inter-governmental Advisory Committee that attended a February workshop, including various Provincial staff that took the time to meet with us and be interviewed; representatives of the K'ómoks First Nation who have met with us; the various non-profit and business organizations that attended stakeholder sessions and interviews with us over the past six months; and, especially the numerous Comox Valley residents that took their time to provide input at the February workshops or who have contacted us personally. The RGS Planning Team would also like to personally thank Rob Roycroft – Manager of Special Projects, responsible for the RGS – and Carol Morfitt – Administrative Officer at the CVRD – for ensuring the RGS study proceeds in a timely and efficient manner.

This report contains a number of maps and illustrations that would not have been possible were it not for the generous permissions granted to us by the Province of BC, the Comox Valley Regional District, the City of Courtenay, the Town of Comox, the Village of Cumberland and the Comox Valley Project Watershed Society. Historical photos are courtesy of Ron Bannerman and Katherine Frank.

Located on the eastern shore of Vancouver Island, the Comox Valley Regional District (CVRD) was established in February 2008. The CVRD encompasses the Village of Cumberland, the Town of Comox and the City of Courtenay along with the Electoral Areas of Baynes Sound (A), Lazo North (B), and Puntledge-Black Creek (C). Within the region's boundaries there is a population of approximately 63,700 people. The majority of this population resides in the urban areas (36,000 or 65% as of 2006), but there is also a growing population in the rural areas. In 2006, there were 19,545 people living in Baynes Sound, Lazo North, and Puntledge-Black Creek, making up 35% of the total population.

By 2031, it is estimated that the population in the Comox Valley will grow to 88,500 people. This population projection signals a growing proportion of people settling in the Comox Valley, both in the rural and urban areas. This growth comes with associated needs such as servicing, housing and transportation. Given the beautiful location of the Comox Valley and proximity to urban amenities, recreational activities, growing arts, culture and culinary scene, it has become a destination both for tourism and residency. The purpose of developing a strategy for regional growth is to create a balance between these various land uses and activities, to protect the natural beauty and function of the Comox Valley, and to ensure that it is a healthy place where people can reside, work and play for many years to come.

The Comox Valley



The Regional Growth Strategy (RGS) Process

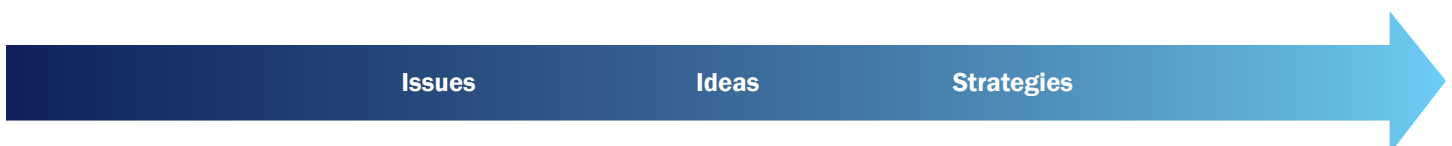
When the CVRD was created in 2008, the Province mandated the creation of a Regional Growth Strategy (RGS). A draft RGS will be prepared by early 2010 with a final RGS policy document to be adopted prior to the end of 2010. The following chart outlines the general timeline and deliverables throughout this process.

The Comox Valley RGS is part of a partnership between the Comox Valley Regional District, the City of Courtenay, the Town of Comox and the Village of Cumberland. It will not include Denman and Hornby Islands, where planning is done by the Islands Trust. It is one of four regional strategies currently underway in the Comox Valley (the other regional strategies address water, sewer and sustainability).

The entire RGS process requires a substantial amount of intergovernmental support and interaction. The provincial government has approved a grant contribution in the amount of \$400,000 and all four Comox Valley local governments are involved through steering committees, intergovernmental advisory and technical committees. These services are provided as local government in-kind contributions.

The RGS will provide a framework for future decision-making and land use with the aim of preserving the region's high quality of life. Specifically, the following key elements will form the RGS as required by Provincial legislation:

NOV-JAN	FEB-JUNE	JUNE-SEPT	SEPT-DEC	JAN 2010 →
PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
Develop Consultation Plan & Collect Data	Issues, Opportunities & Background Report	Analysis of Policy Options	Draft Regional Growth Strategy	Government Approval Process



K'ómoks First Nation Consultation

Consultation with the K'ómoks First Nations is an important part of this process. The K'ómoks First Nation has been in the Treaty negotiations with the Federal and Provincial government since 1993. They are currently in Stage 4, Agreement in Principle, of the six-stage Treaty process. The goal of Stage 4 is to reach agreement on each of the topics that will form the basis of the Treaty, including existing and future interests in land, sea and resources. To the extent that the treaty process results in settled land claims prior to the conclusion of the RGS, those claims will be reflected in the final document. Also, to the extent that there are specific land use issues raised and identified by the K'ómoks Band, those will be discussed with them during the RGS process.

Public Consultation

To-date there has been a series of consultation activities. In addition to focus group meetings with a range of non-profits and businesses in the CVRD, there have been meetings and workshops with local and provincial governments and agencies and the first round of public open houses. The outputs from these workshops can all be found on the CVRD website www.rdc.ca/rgs.

The first round of open houses was held in February 2009 in various locations throughout the Comox Valley- Black Creek, Cumberland, Comox and Courtenay. The purpose of these workshops was to identify issues to be addressed by the RGS and to begin to develop the content of these issues. To do this there were a number of activities that residents participated in. These included:

A community visioning exercise that aimed to prioritize residents' values for the Comox Valley. Among the key issues identified by participants were:

- create an environment-first, more sustainable approach to regional and local planning;
- protect agricultural lands and promote local food production and consumption;

- create a safe and efficient regional bike path network and improved transit connections;
- restore and protect the Courtenay River Estuary;
- implement a coordinated and cooperative regional planning approach;
- create an interconnected regional park system;
- and, require more innovative, leading edge, green, community-scaled development, including infill development in the three municipalities.

Participants also identified key areas and issues that the RGS should address. The best qualities tended to relate to the Comox Valley's natural features and local food base while the worst qualities related to the deterioration of the ecosystem's health through fragmentation created by urban and rural sprawl.

A series of workshops were also held in local high schools to engage youth in the long-term planning and thinking about their communities. Through video, photography, collage, and mapping, youth worked together to tell their own stories about places they care about in their communities. Issues were captured on video and displayed at the first round of open houses. The youth videos and photography work can be viewed on the project website.

Following the first round of open houses, a traveling exhibit of the materials has been displayed at civic centres throughout the Comox Valley. This exhibit will continue until the end of the project, with updated materials as the project progresses.

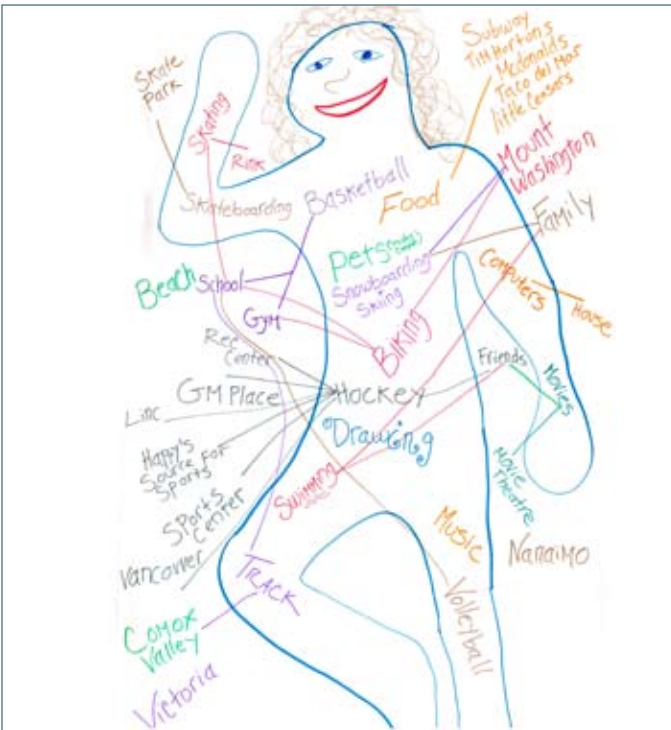
The second round of open houses will take place in June 2009, following the release of this background paper. The public discussion at this time will focus on the RGS issues and policy ideas that are outlined in this paper. This discussion will inform the next phase of work- creating approaches to growth management and draft RGS policies that will be released in fall 2009. The draft RGS will be ready in January 2010 and then undergo a formal public consultation and governmental approval process.



Students were asked to draw an outline of their body. In the inside of their body they were asked to write or draw the things that made them unique, the activities they were good at; their passions. We then asked the students to write in the exterior of their body the places and people that supported their activities, interests, and passions. The students then linked these interior assets with their exterior assets. The purpose of the activity was to enable youth to understand that their world originates from their identity.



Students worked together in groups to select two photographs that they felt were important to share with the community. One student from each group presented the photographs to the rest of the class and to the video camera. These presentations are on the DVD which is screening during this meeting. Presentations are un-edited, and each person who presented in class appears on the DVD .



Historical Development of the Comox Valley

Like many communities on Vancouver Island, the Comox Valley developed around the Region's natural resources. The Pentlatch and K'omoks First Nations occupied villages along the coast, rivers and on the islands- drawn to the area for the Valley's abundant food source. In the early 1800s European colonists arrived intending to start farms. They were drawn to the area because of the fertile landscape for agriculture, especially livestock and dairy, and an adjacent fishery in Baynes Sound.

At the same time larger settlements developed around the coal, agricultural and logging industries. The Village of Cumberland and Union Bay were commercial centres for coal, while the Merville and Black Creek areas became agricultural settlements and the vast forested areas provided a resource for the logging industry. Courtenay later developed as a city centre with the railway link to Victoria, and the Town of Comox began to cultivate its tourist industry as early as the 1920s . The resource industries of logging and mining started to decline in the region after the 1960s. However, employers such as the Royal Canadian Airforce in the form of CFB Comox (opened in 1942) and Mt. Washington ski resort (opened in 1979) have provided some long-term economic stability to the region. More recently, the growth industries have been tourism, the service industries and construction.



View of Comox Harbour from the Elk Hotel tennis courts



Fishermen in front of Elk Hotel



Fisherman



View of Comox Harbour



Ladies of Comox



Logging



Comox Harbour



Courtenay before the fire

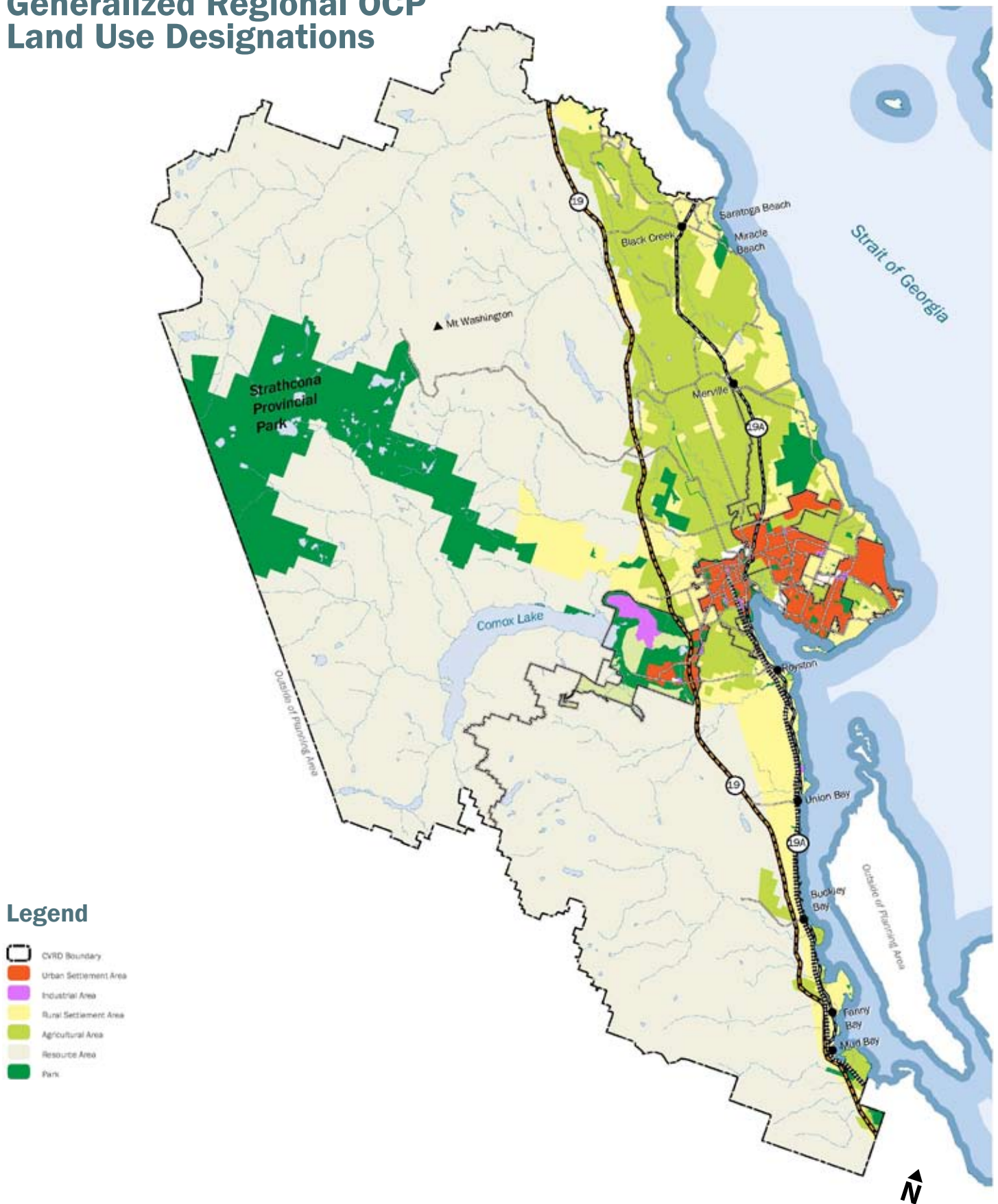
Land Uses in the Comox Valley

Most of the land within the Comox Valley is owned privately, with small portions of crown land covering regional and provincial parks such as Strathcona Provincial Park and Seal Bay Regional Park.

There is also a small portion of provincial Crown land covering the Upland Resource Area to the south of the CVRD. The 19 Wing Comox land in the Town of Comox is federal Crown land.

At the regional level, a large portion of land west of the Inland Highway is designated Upland Resource. The exceptions within this area are the Village of Cumberland, resort-based Mt Washington and the provincially owned Strathcona Provincial Park. Upland Resource Areas permit a range of resource-based activities, including forestry harvesting and production, agriculture, recreation and open space and public and private utilities. Most of this area falls within the jurisdiction of Baynes Sound and Puntledge-Black Creek.

Generalized Regional OCP Land Use Designations

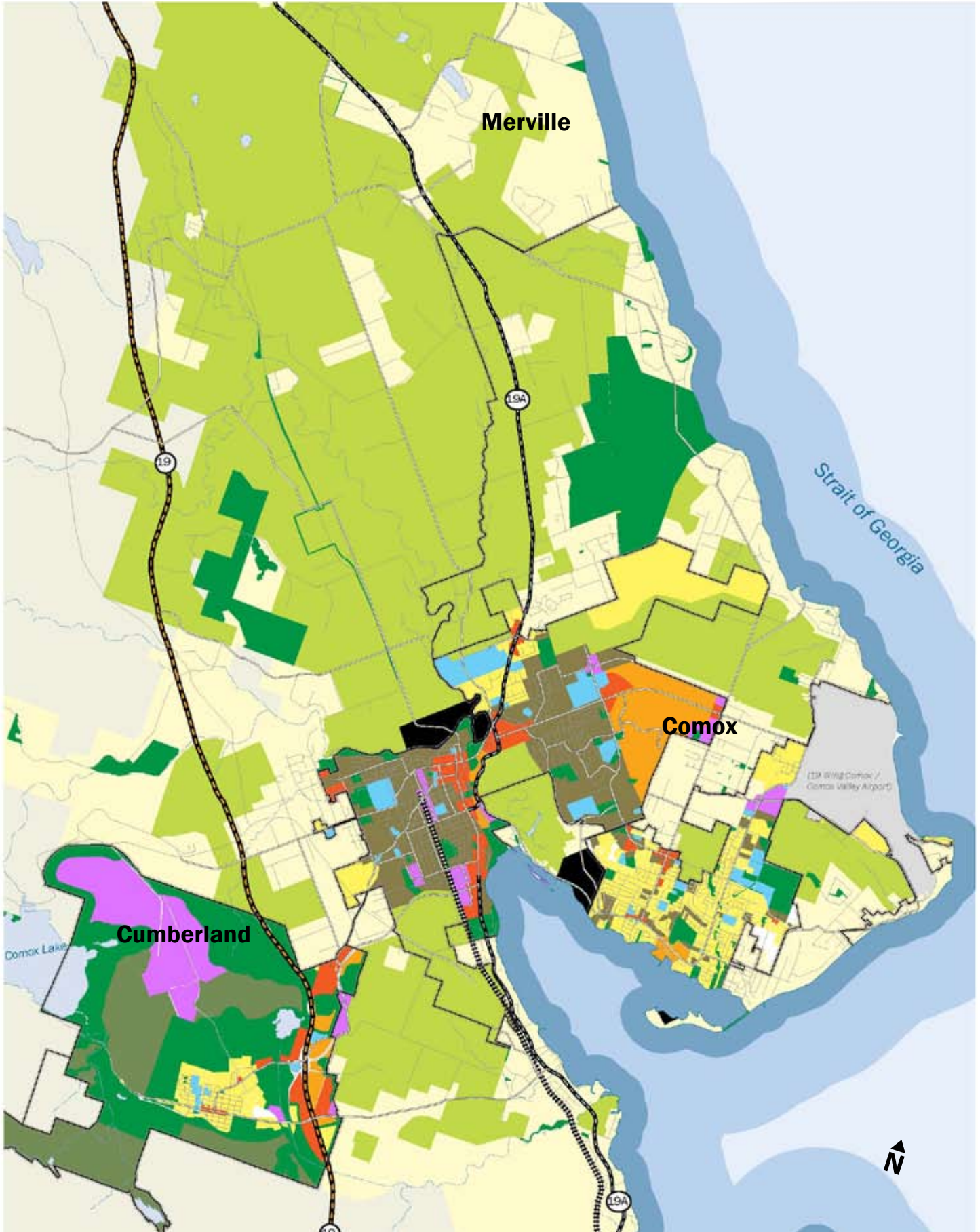


The main settlement areas are the City of Courtenay, the Village of Cumberland and the Town of Comox, each with their own Official Community Plan and related land use designations. Settlement within the Comox Valley tends to cluster within the three urban areas and along the boundaries between the Regional District and the Urban Areas. Within the Town of Comox and the City of Courtenay there are more urban style developments with higher density housing allowances and mixed-use areas.

Legend

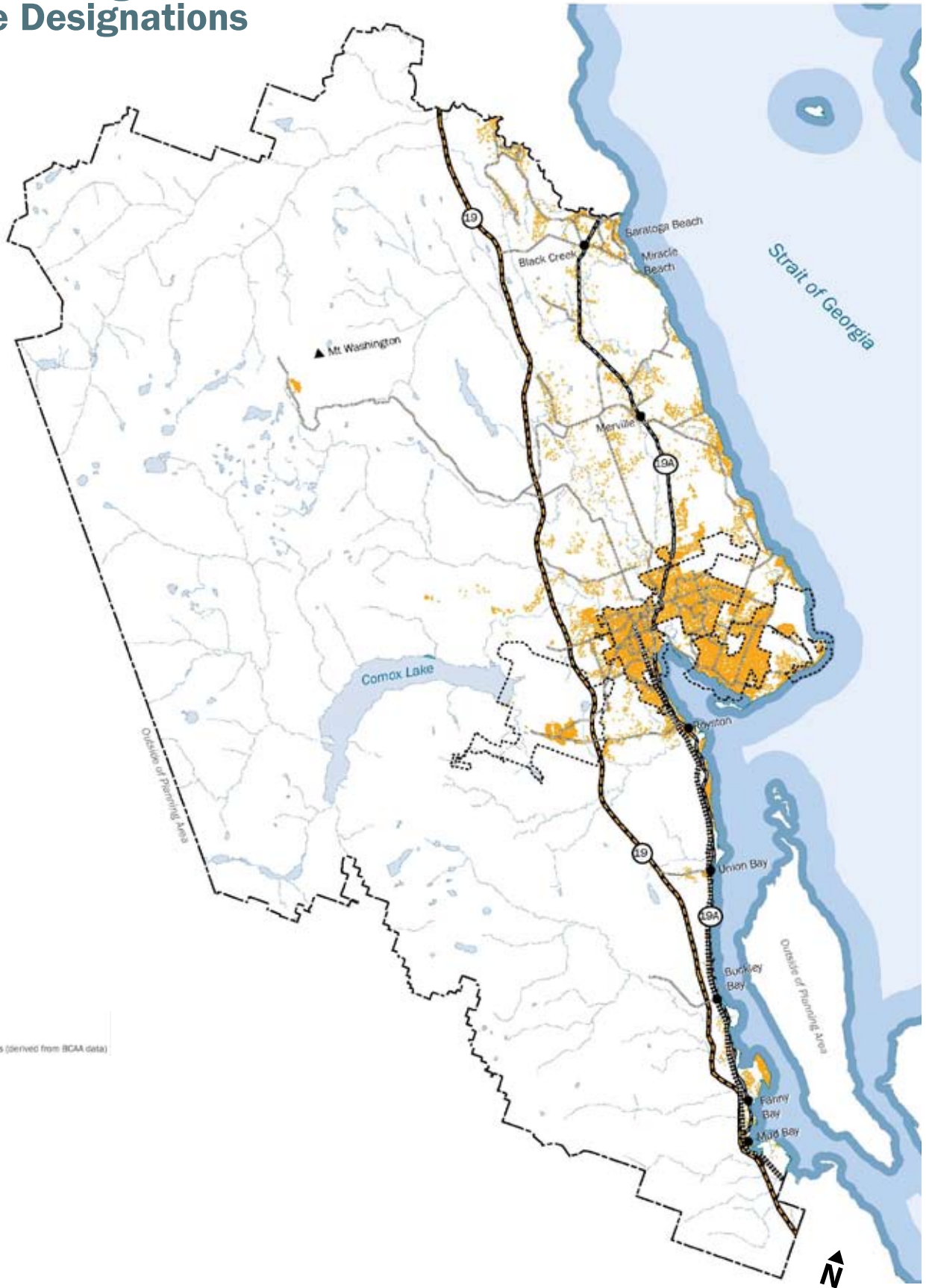
	Urban Residential
	Residential Single Family
	Rural Residential
	Mixed Use
	Commercial
	Industrial
	Civic
	Park
	Agriculture
	Resource Area
	Working Forest

Generalized Municipal OCP Land Use Designations



Outside of these major settlement areas, there are the smaller unincorporated settlements (such as Royston, Union Bay, Black Creek and Merville) within the Regional District. These areas have more rural style housing and resource-based employment, such as agriculture, shell fishing, forestry and recreation. Within these areas, regional services are often provided either privately or through Improvement Districts. Recently, these areas have been experiencing development pressure in the form of new suburban-style residential development.

Generalized Regional OCP Land Use Designations



Legend

-  CVID Boundary
-  Existing Residential Buildings (derived from BCIA data)

Structure of this report

Throughout the following chapters, issues related to the appropriate uses of land in the Comox Valley will be discussed in relation to future growth and employment over the next twenty years. Each chapter focuses on an RGS issue, the current situation, trends and issues, along with policy ideas for the RGS.

The chapters are organized as follows:

Population and Demographics – provides an overview of projections for population numbers, ages, location preferences along with associated issues and opportunities that may arise.

Housing and Affordability – discusses the need for a range of housing types and tenures to accommodate both the existing community and new residents.

Local Economic Development – provides an overview of existing economic trends and projections for the future.

Transportation – discusses the potential for transportation options that are sustainable, accessible and contribute to a healthy lifestyle.

Agriculture and Food Security – focuses on protecting farmland and shoreline areas for food production to create a strong, local economy and to ensure that future generations have better access to affordable and nutritious food.

Parks and Natural Areas – discusses protection and enhancement of key natural heritage features in the Valley.

Regional Services – Water, Sewer, and Waste- provides an overview of three infrastructure elements- water, sewer and waste water.

Public Health and Safety – illustrates the connection of public health with planning decisions, especially as it relates to issues of water security, active transportation and recreation, and fire and emergency services.

Climate Change – outlines existing GHG emissions in the Comox Valley and develops a framework for understanding the impact that future growth options will have on the production of GHG emissions.

The purpose of this comprehensive background paper is to provide an overview of each of the RGS issue areas and to connect these issue areas to one another. Making linkages between transit use and public health, agricultural production with the local economy and so on, will help to frame future planning decisions. Growth management in the Comox Valley will focus on balancing various land use needs through an understanding of how they connect together.

Each chapter provides an introduction to the issue, the current situation within the regional context, trends and issues including a review of existing policies and plans, followed by points for discussion. These points for discussion are meant to provide a basis for discussion over the coming months as we develop the draft RGS policies.

Conclusion with Approaches to Growth – discusses how these various issues come together to inform potential approaches to growth management within the Comox Valley.

It sets the stage for the public discussion and choices that will need to be made to develop the final RGS.



CHAPTER 1

Population & Demographics

Introduction

Population Profile

Population by Age and Gender

Population by Municipality and Electoral Area

Dependency Ratios

Births and Deaths

Population Change

Growth Forecasts to 2031

Municipal and Electoral Area Forecasts

Increasing Aging Population Forecast

Increasing Dependency Ratio Forecast

Decreasing Youth Population Forecast

Population Growth and Dwelling Unit Forecast

Points for Discussion

Introduction

A good understanding of population characteristics and demographic trends is crucial for long-term land use planning. Population dynamics influence the demand for public and private services, as well as demand on land and resources. This section provides an overview of current and projected population, as well as an overview of key considerations in terms of the implications population change could have on the region.

The figures presented in this chapter were derived from several sources, including Canada Census, BC Stats and Local Health Area¹ data. Projections are based on BC Stats' P.E.O.P.L.E. methodology (Population Extrapolation for Organizational Planning with Less Error), using census data up to 2006. This methodology is BC Stats' standard framework for developing population projections. It is based on historic population trends (e.g., fertility rates) and historic in- and out- migration trends. As such, the projections do not consider the potential impacts that the current recession may have on key population drivers like in-migration².

As with most other statistical information in this region, comparative analysis over time is complicated by the fact that the CVRD was created in 2008, when the Comox-Strathcona Regional District was divided into two regional districts. Electoral Area boundaries have also changed over time and the region's three municipalities have all grown in land area, which has compounded the difficulties of assembling consistent historical data.



Population Profile

The population in Comox Valley grew by an average of 1.6% between 2001 and 2006 and reached a total of 60,288 in 2006, the most recent census year.³ This total is estimated to have risen to 63,709 by 2009, and is predicted to reach over 88,500 by 2031, or approximately 23,000 additional people over the RGS time horizon.

While in some ways the demographic make-up of Comox Valley reflects patterns at the provincial level, it is distinct in several ways. The region was one of the Province's fastest growing areas in the early 1990s, growing by 25% between 1990 and 1995. Slower population growth occurred in the late 1990s, likely due to a weakening in the resource economy throughout the Province.

Population growth rates have recently averaged just under 2.0% annually in the past five years. Although the rapid growth experienced in the early 1990s has been replaced by average growth rates, the perception that the region remains one of the fastest growing areas in the Province is still pervasive in the Comox Valley.

As with the rest of the Province, the population is aging, due partly to natural aging dynamics and also to the area's popularity with retirees. However, the Comox Valley has aged more quickly than the Province as a whole, adding almost 11 years to its median age over the past 20 years, compared with a provincial gain of just 7.2 years.

More recently, there has been an increase in growth through in-migration, primarily through the growing popularity of the region amongst retirees and seniors. This growth was aided in part by factors such as the addition of direct flights to the Comox airport from Alberta.

Related to the area’s popularity amongst retirees, the population breakdown in the region is characterized by a relatively large 65+ age cohort and a rising median age. The age cohort is over-represented in the region in comparison to provincial and national figures where aging demographic trends are well documented.

With the current and growing recession, there are considerable emerging challenges facing Comox Valley and the Province as a whole. Given the speed and scope of the market changes, it is difficult to forecast their potential impacts on population change as it relates to in-migration. For instance, will there be fewer jobs attracting young people and families to the region? Will the number of seniors retiring to the region be reduced as market-based pension and retirement savings are reduced? These are questions that cannot be answered at this stage, particularly as the full scale, scope and length of the recession is not known at this time. Still, the potential impacts and the implications for regional growth should not be underestimated.

Population by Age and Gender

Figure 1.1 shows the gender and age breakdown for population in the region. This illustrates the ‘baby boom’ presence in the 40-59 year age range and relatively small representation in the 20-40 year cohorts. This pattern mostly follows provincial averages and is similar to surrounding regional districts.

Population by gender and age cohort

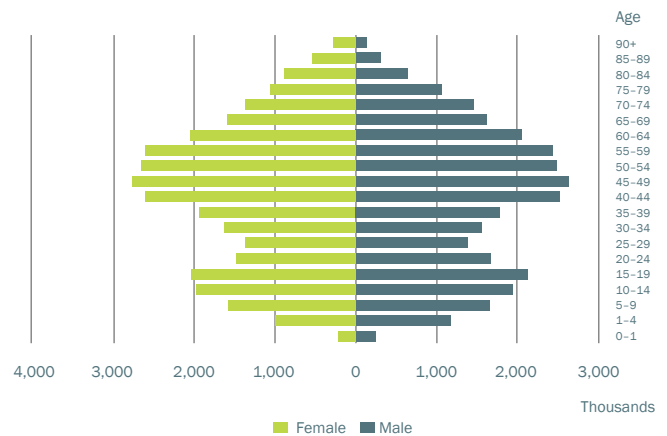


Figure 1.1

Source: BC Stats – Local Health Area 71, Courtenay (including Denman & Hornby)

Population by Municipality and Electoral Area

Figure 1.2 presents the breakdown of population in the region by municipality and for each of the electoral areas in 2006. With almost 22,000 people, Courtenay is the largest population centre (39% of the total Comox Valley population), while Electoral Area C is the largest of the unincorporated areas. It is worth noting that the electoral areas collectively make up 35% of Comox Valley’s current population. In addition to the rural communities of Union Bay, Oyster River, Saratoga Beach and Fanny Bay, a significant proportion of electoral area population is clustered near Comox and Courtenay in Areas A, B and C. While over 60% of the total Comox Valley population lives within municipal areas, an additional 10% lives within 500 metres of Courtenay-Comox municipal boundaries.

Population by municipality and electoral areas, 2006

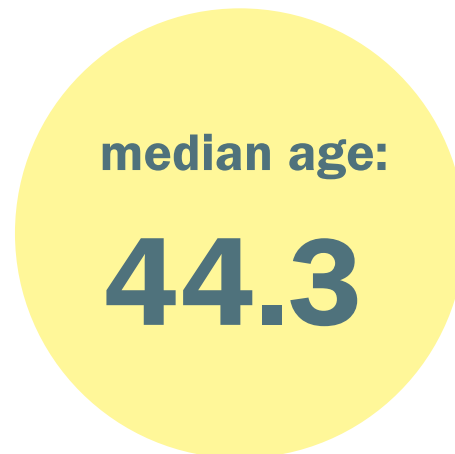
Area	Population	Population %
Courtenay	21,940	39%
Comox	12,136	22%
Cumberland	2,762	5%
Electoral Area A	4,885	9%
Electoral Area B	7,219	13%
Electoral Area C	7,441	13%
Total	56,383 ⁴	100%

Figure 1.2

Source: BC Stats – 2006 Census Profiles

Dependency Ratios

The median age in the region was calculated at 44.3⁵ in 2006, about five years higher than the Province’s median age of 40.8. The total dependency ratio⁶ was 58.6 in 2007, meaning that for every 100 residents, there were nearly 59 residents who were below or above the typical working age. This statistic is a measure of economic and social security since, as the dependency ratio goes up, the working age population generally feels a greater burden in supporting the dependant groups. It is important to note that while the child dependency ratio, at 30.6, is very near the provincial average of 29.5, the elderly dependency ratio in Comox Valley is 27.9, well above the provincial rate of 21.3. Representation in the 18-24 age cohort, in terms of percentage of total population, is currently 1.7% lower in Comox Valley than at the provincial level. Distributions in the 0-17 and 25-64 age cohorts are very close to provincial averages.



Births and Deaths

While the fertility rate in Comox Valley has recently been in decline, it is predicted to level off and then begin increasing around 2015, as illustrated in Figure 1.3. The overall contribution of natural increase to population growth, however, will be negative as the increase in mortality rate outpaces the fertility rate. In 2005, the number of deaths exceeded the number of births. This is projected to continue into the future.

Historical and projected birth and death rates in Comox Valley, 1986 - 2036

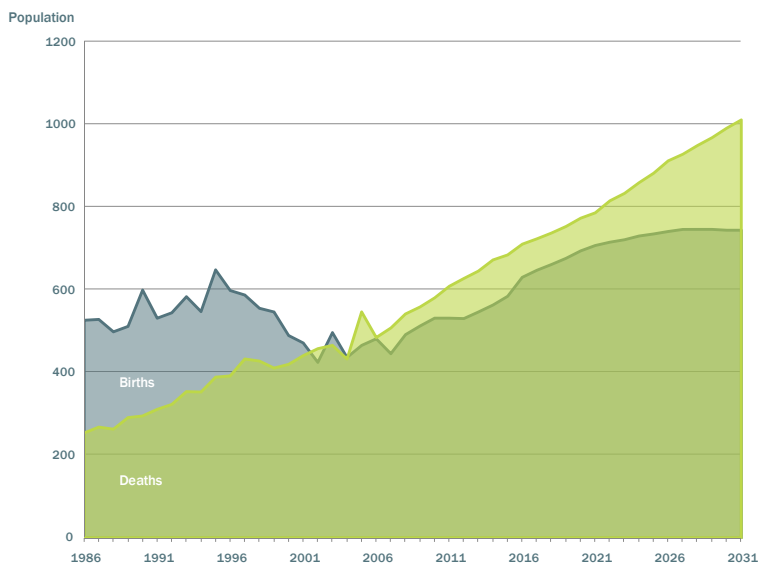


Figure 1.3

Source: BC Stats – Local Health Area 71, Courtenay

Population Change

In addition to fertility and mortality, in- and out- migration influences population change in a given area, as illustrated in Figure 1.4. The migration rate in Comox Valley has historically been volatile; however, an increase is predicted related to the attractiveness of the region, especially with retirees. This factor could be influenced by the current recession which has severely impacted market-based retirement savings and pensions (as noted in the Economic Development chapter, pension values have been halved in many cases).

While in-migration rates could continue upward, the increasing mortality rate will continue to decrease the overall rate of natural increase, which is predicted to fall below 1% by 2031.

Historical and projected population growth in Comox Valley, 1986 - 2036

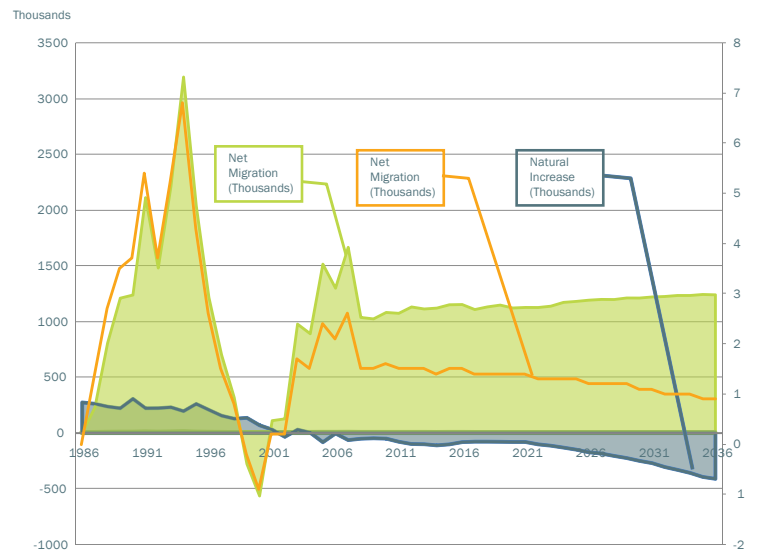


Figure 1.4

Source: BC Stats – Local Health Area 71, Courtenay

Growth Forecasts to 2031

Municipal and Electoral Area Forecasts

While population growth ranged between almost 0% to just over 2% (averaging 1.6%) annually between 2001 and 2006, the projected rate of population growth over the coming ten years (2011-2021) is projected to decline slowly from about 1.6% to around 1.4% annually. This decline in the annual growth rate is projected to continue through to 2031 when the annual growth rate is forecast to be about 1.1%. Based on these growth rates, the electoral areas could see just over 8,000 new residents by 2031, while the municipal areas could gain approximately 15,000 new residents in that time. Figure 1.5 illustrates how this potential growth is expected to occur over time. Population growth in the different areas of the region will force decisions on where to locate new development and how it can best be supported with existing and new infrastructure and community services.

Growth projections by Municipality and Electoral Area, 2006 - 2031

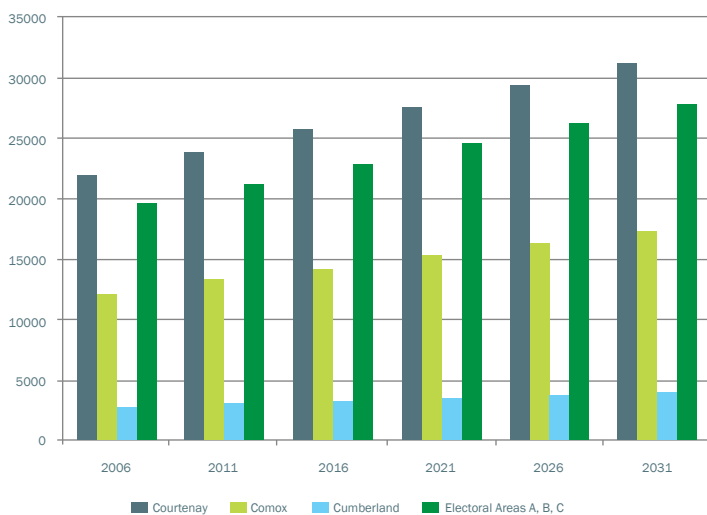


Figure 1.5

Source: BC Stats – 2006 Community Profiles, Local Health Area 71

It is important to note that these growth figures are derived from projection models for the entire region and based directly on past trends. They do not account for the potential influence associated with the adoption of the RGS (i.e., the potential of directing population to certain areas) or the implementation of provincial policies related to greenhouse gas emission reductions which could also impact growth and settlement patterns. Growing awareness of the environmental, social and economic benefits associated with more managed growth, curbing urban and rural sprawl, and developing complete communities will also likely impact future growth and settlement patterns. Regardless, the potential growth will require careful management in terms of preserving the character and function of these areas.

Increasing Aging Population Forecast

The population in the planning area is rapidly aging, with seniors (65+) expected to be the fastest growing cohort in the study area. This is illustrated in Figure 1.6. The seniors' population is projected to grow from 17.9% of the total population in 2008 to 26.1% in 2031. This increase will result in a significantly greater demand for age-appropriate services for this group in the planning area, including health care, recreation, age appropriate commercial services and the like. Figure 1.7 illustrates the rate of change in the 80+ age cohort and compares this with the 65-80 age cohort. As shown, the very senior population (80+) is projected to increase from 4.6% of the population in 2007 to 7.4% in 2031. This increase will have a significant impact on health care expenditures due to the higher per capita health costs associated with people aged 80 and older. An aging population also has implications for land use planning in that mobility needs will change as more elderly, less mobile population cohorts gain a larger share of the region's population. This could require that transit services be expanded and hours extended, handyDart services be expanded, that buses be equipped with universal access features (e.g. no stairs), and that sidewalks and pathways be constructed or expanded to accommodate wheelchairs and walkers. More dense and highly mixed, and therefore less car dependent neighbourhoods could help increase accessibility to basic needs and services and prevent isolation among seniors.

Growth projections by Municipality and Electoral Area, 2006 - 2031

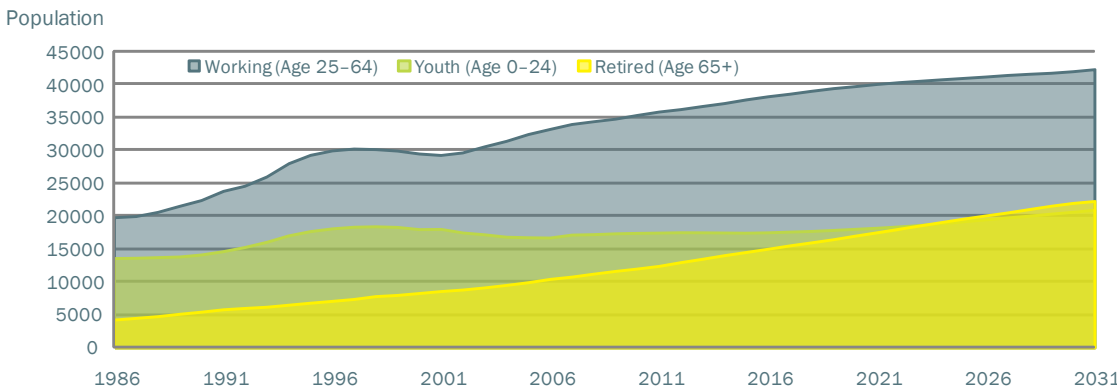


Figure 1.6

Source: BC Stats - Local Health Area 71, Courtenay

Population change projections in Comox Valley 65+ and 80+ age cohorts, 1986 - 2031

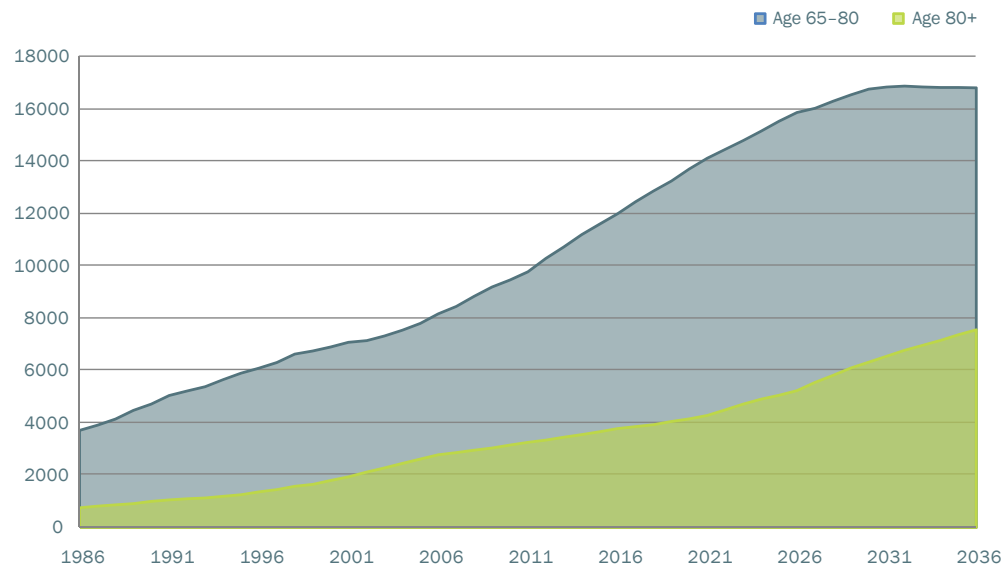


Figure 1.7

Source: BC Stats - Local Health Area 71, Courtenay

Increasing Dependency Ratio Forecast

Figure 1.8 presents the child, elderly and total dependency ratios in Comox Valley and the projected changes up to 2031. The dependency ratio is an indication of the balance between working age (15-64) and non-working age (0-14, 65+) residents in a given area. The total dependency ratio in Comox Valley has been steadily rising since 2000 and is forecast to continue until 2010. This will be especially severe between 2010 and 2031 as it moves from 58.1% to 79.2%. The elderly dependency ratio is almost entirely responsible for this change. This rate increased from 18.1% in 1986 to 28.4% in 2008 and is expected to rise steadily to 46.9% by 2031. The child dependency ratio, in contrast, is expected to increase by only 2.5% between 2008 and 2031. In addition to land use implications related to an aging population noted in the previous section, an increasing elderly dependency ratio may influence spending in the region.

Decreasing Youth Population Forecast

The proportion of school aged youth (5-17 years) will continue to decline over the next seven years before returning to current levels around 2020. Their share of the total population, however, will decline from 14.7% to 12.3% over this period before climbing to a forecast level of 13.4% in 2031. These estimates are consistent with figures from the local school district. Although the demand for the various school programs is predicted to shift, the overall enrollment is expected to be back to current levels around 2015 (Figure 1.9).

Dependency ratio changes 1986 to 2031

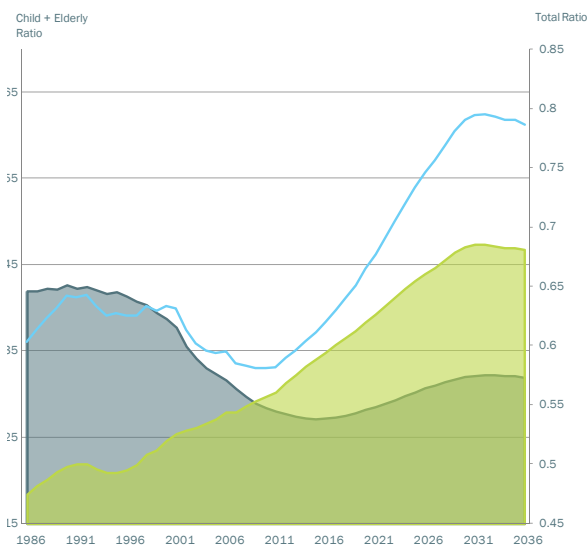


Figure 1.8

Source: BC Stats –
Local Health Area 71, Courtenay

■ Child Dependency Ratio
■ Elderly Dependency Ratio
— Total Dependency Ratio

The proportion of post-secondary school aged youth (18-24 years) is forecast to grow up until 2012 and then decline through to 2025. From 2025 to 2031, this population is expected to grow marginally. The age group's share of total population is projected to grow slightly from 8.3% in 2008 to 8.5% in 2012, and then decline steadily to a share of 6.2% in 2031. Attracting and/or retaining a strong post-secondary youth population could play a role in offsetting the increasing dependency ratio due to the growing and in-migrating senior population (Figure 1.9).

Changes in youth populations 1986-2031

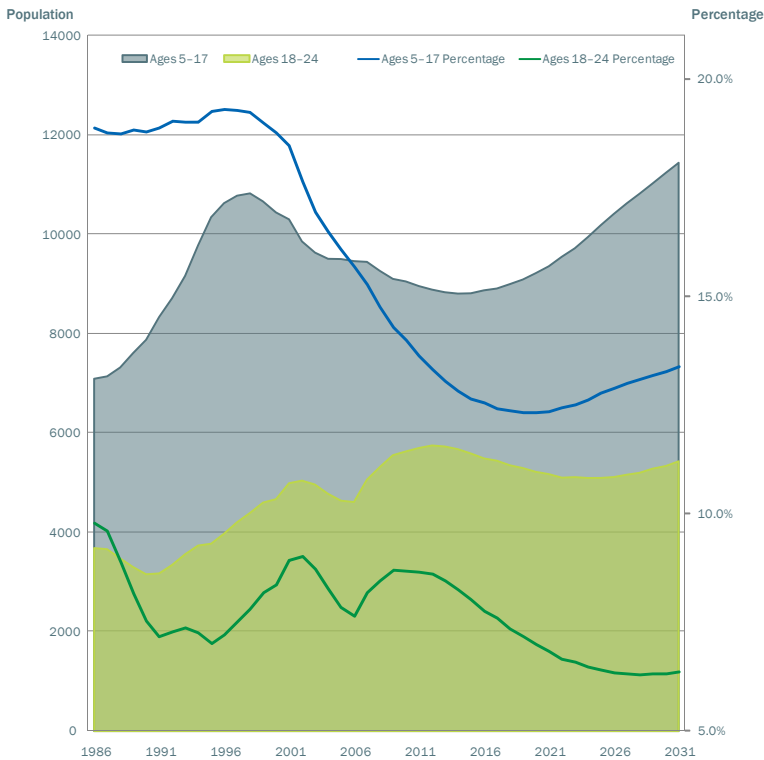


Figure 1.9
Source: BC Stats – Local Health Area 71, Courtenay

Population Growth and Dwelling Unit Forecast

Figure 1.10 shows the forecast population growth and the expected demand for dwelling units in Comox Valley. Based on a population growth averaging 1.4% per year up to 2031, the region is expected to have a demand for about 10,000 homes between 2008 and 2031. This would amount to approximately 480 new dwellings needed per year to accommodate additional population. This subject is covered further in the Housing and Affordability chapter.

Projected Population Change and Dwelling Unit Demand, 1986 - 2031

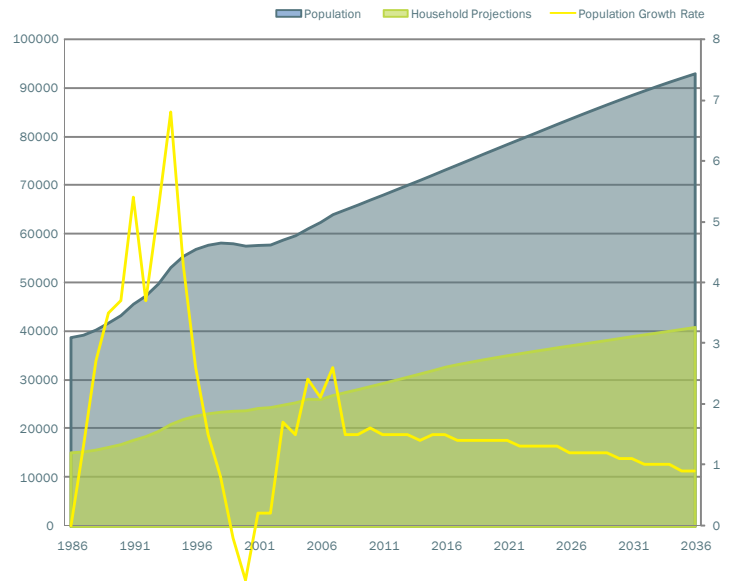


Figure 1.10
Source: BC Stats – Local Health Area 71, Courtenay

Population Profile

The demographic and population trends presented here raise a number of questions for regional decision-makers to take into consideration when developing the RGS. Some of these key questions are outlined below.

An aging population coupled with a decreasing youth population

The increase of older residents in Comox Valley, combined with the decreasing youth population, will have implications for service requirements and infrastructure investment.

Key questions include:

1. What services will an aging regional population require and where should they live to best access them?
2. How will an aged population travel within the region and what facilities will they want access to?
3. What population will be providing services to the older population and where will they live?
4. How can young families and younger people be attracted to locate in the region?
5. What does a temporary but significant decline in school age children mean for the current operation of educational facilities?

Decreasing regional growth rate

The population growth rate in Comox Valley is slowing and working age populations are decreasing as a share of the total population. These trends present challenges in terms of regional economic drivers and decision-makers will need to consider how this could impact the local economy and quality of life.

Key questions include:

1. Will a shrinking working age population bring with it a shrinking business tax base?
2. Will an increasing population of seniors and elderly people (80+) result in an increasing proportion of home owners deferring property taxes? How should the region prepare for such a potential?
3. What types of industries/sectors are likely to attract working age populations to the region? How could these industries/sectors be encouraged and supported? What types of facilities and locations will these sectors require? How can these industries encourage students who leave the Valley for post-secondary education to return to the Valley?
4. Will there be a new service industry supporting this older population? What should the region do to support the seniors' service industry?
5. Considering the declining population within the 18-24 age cohort, should strategies for attracting young people/ families be a priority?

Managing growth

The spatial and land use implications of emerging and potential population and demographic trends will have to be carefully considered. Key questions include:

1. Would any one model of growth management help support or better manage the impacts associated with the changing demographics?
2. Should growth be directed to existing centres or should current pattern of dispersed growth continue?

Understanding choice

Gaining a better understanding of why people are choosing to locate in urban or more rural areas will also be important.

Key questions include:

1. Are people moving to the urban centres because they offer jobs and services in close proximity to each other and to housing – i.e. within a walking and/or cycling distance?
2. If so, how could regional and municipal land use policies and zoning better support this?
3. Are people moving to rural areas because they are attracted to making a living off the land, or do they want to be surrounded by a more rural landscape while being within easy commuting distance of the region's urban areas?



CHAPTER 2

Housing & Affordability

Introduction

Current Situation

The Market

Housing Mix

Housing Tenure

Housing Age

Housing Requiring Major Repairs

Housing Demand Volume

Demographic Shifts

Land Supply and Major Developments

Housing Costs and Affordability

Existing Housing Policies

Housing and Growth Management

Trends and Issues

Ideas

Points for Discussion

Introduction

Housing is a critical community asset and an important local economic driver. Well-balanced communities provide housing opportunities for people in all stages of life, different family types, a range of financial situations, and for individuals and families with special needs. A diversity of safe and secure housing opportunities can help a community retain working families and attract new businesses. Strategic decisions around housing development also helps communities plan for, build and maintain services and amenities. The economic, social, and environmental impacts of housing development should enhance and complete the community. Housing policy should seek to encourage this balance rather than simply accommodate current market trends.



Current Situation

The Market

In the past several years, the quantity and variety of market housing supply has reached all time highs. In Comox Valley's three municipalities, the construction of new apartments actually outpaced new single-family homes in 2005 and 2006 (Figure 2.1). This is likely due to the development of two larger mid-rise condos in Courtenay and an eight storey tower – the Region's tallest – planned for Courtenay, but not constructed due to the economic downturn. Despite this run on new supply, demand remained high and average sale prices continued to escalate. Until the past two years, Cumberland experienced very little of this new construction activity (Figure 2.2). In the Regional District, 235 building permits were processed in 2007 for a total of 111 units.

The past year has seen a significant downward shift in the market, and the near term situation is difficult to anticipate given evolving market conditions. By the end of 2008, home sales and new construction had declined, the gap between listings and sales had increased^{2,3} (i.e., there were more new listings than new sales), and the overall supply of housing for sale had increased. However, mortgage rates are now at historic lows and the costs of labour and materials are decreasing. This could create good development conditions for owner-builders or qualified buyers who are just entering the market.

Building permits by type in Comox, Courtenay, and Cumberland¹

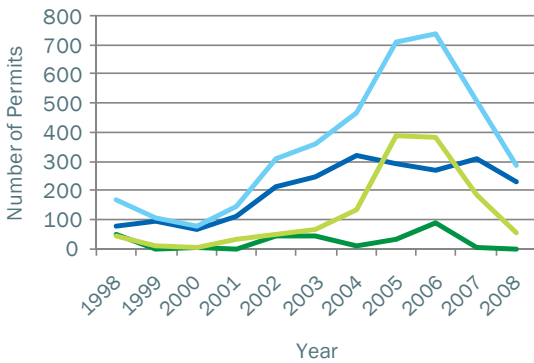


Figure 2.1
 Source: Statistics Canada
 produced by BC Stats
 www.bcstats.gov.bc.ca

- all single family
- all row houses
- all apartments
- all towns, all unit types

Building Permits by Municipality

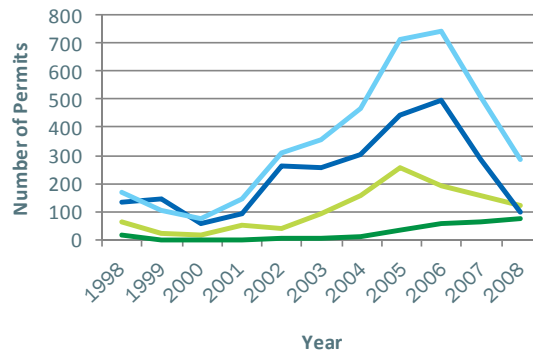


Figure 2.2
 Source: Statistics Canada
 produced by BC Stats
 www.bcstats.gov.bc.ca

- Comox
- Courtenay
- Cumberland
- all towns, all unit types

Housing Mix

Affordable communities offer a good variety of housing choice. Houses on smaller lots, carriage houses and attached rental suites, or apartments and/or townhouses that share land in strata tend to be more affordable than those on larger lots. Attached units are more affordable to heat and maintain. Of approximately 24,000 housing units in the CVRD, three-quarters are single-family detached residences (Figure 2.3). In the three municipalities, 60% are single family, with a significant number of low-rise apartments in Comox and Courtenay (14% and 20% respectively of all units).

Housing Mix (2006)

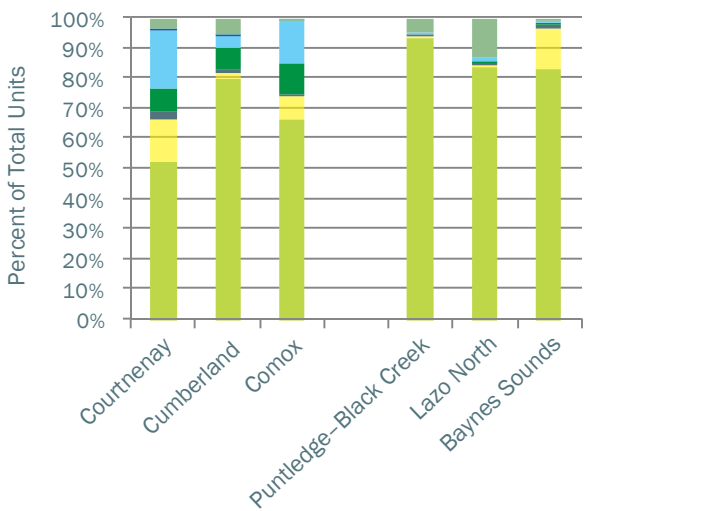
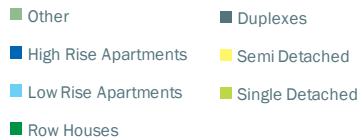


Figure 2.3

Source: Statistics Canada (2007, 2006 Community Profiles, 2006 Census)



Housing Tenure

Rental housing accounts for one-fifth of all housing units in the Comox Valley. Courtenay has the highest number and proportion of rental housing at 31% of all units (Figure 2.4). This is followed by Comox and Cumberland with about 20-25% rental units. In the Regional District, Puntledge-Black Creek has slightly more rental housing than the other electoral areas, but rental housing is still less than 15% in these areas.

Housing Tenure (2006)

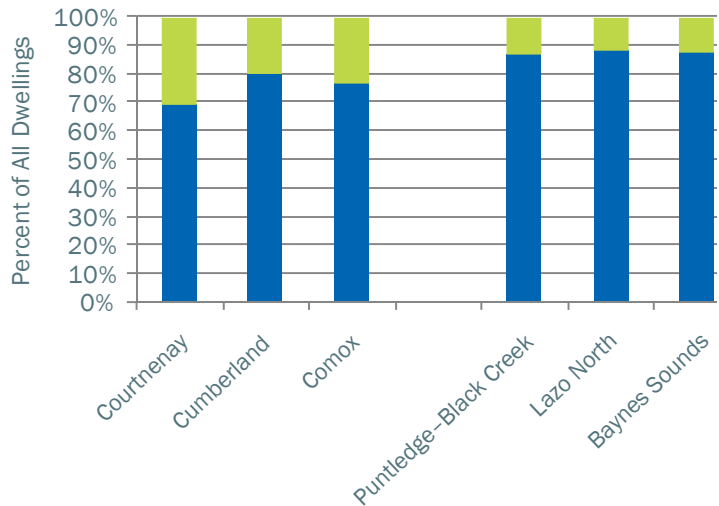


Figure 2.4

Source: Statistics Canada 2006 Community Profiles, 2006 Census



Housing Age

Forty-four percent of housing units in the planning area are less than twenty years old (Figure 2.5). Courtenay and Comox both saw their housing stock approximately double in the last 20 years (54% and 45% of houses are less than 20 years old respectively). In that time period the three Electoral Areas saw somewhat less new housing, ranging from 30% to 35% of all existing houses, and Cumberland saw the least new construction with 330 new units of 1135 total units (29%).

Age of Dwellings (2006)

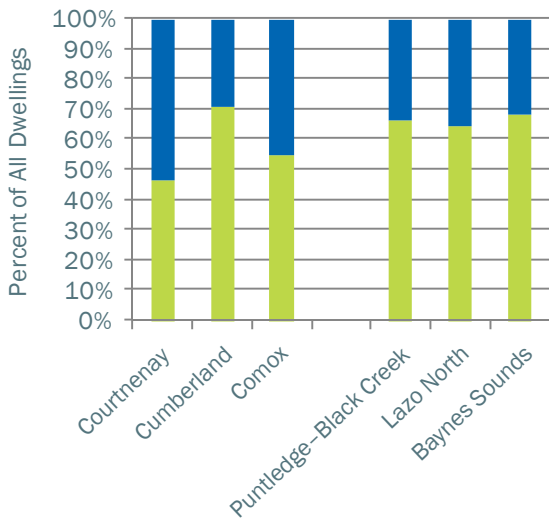


Figure 2.5

Source: Statistics Canada (2007, 2006 Community Profiles. 2006 Census)

■ Percent of dwellings constructed between 1986 and 2006
 ■ Percent of dwellings constructed before 1986

Housing Demand Volume

While demand forecasts are more difficult to make in uncertain economic times (in-migration, the second driver of population, is linked closely to the performance of the local economy), BC Stats estimates a demand for an additional 10,000 homes between the years 2007-2031 to accommodate a population increase of over 26,000 people (Figure 2.6). By 2031, BC Stats estimates there will be almost 90,000 people living in almost 40,000 households (including Denman and Hornby Islands). On average, approximately 480 new dwellings per year would be needed to provide homes to this increased population. If demographic trends are correct, much of this in-migration will be over 65 years of age and a key consideration for the RGS will be the type of housing they require now and as they age in the Comox Valley.

Population and Household Projections

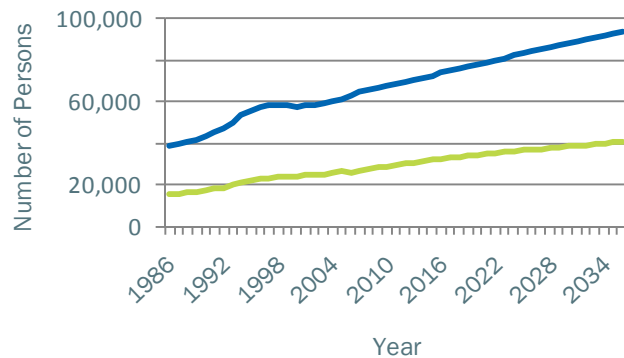


Figure 2.6

From BC Stats P.E.O.P.L.E. Projections
 Source: Statistics Canada

— Population
 — Household Projections

Demographic Shifts

The population in the planning area is rapidly aging, with seniors (65+) expected to be the fastest growing age cohort in the planning area. This age group is projected to grow from approximately 17% in 2008 to over 26% in 2031 (Figure 2.7). Besides an increased demand for services, this group will be seeking age-appropriate housing (e.g., smaller units, single-floor/no stairs, etc.).

Population and Demographic Projections to 2031

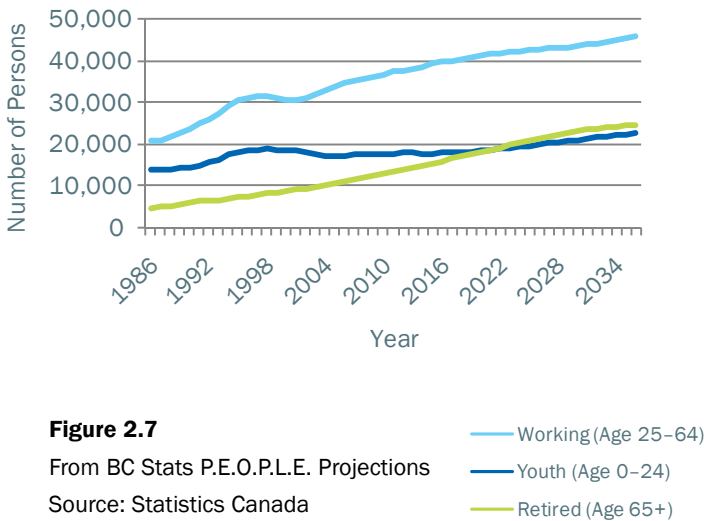


Figure 2.7

From BC Stats P.E.O.P.L.E. Projections
Source: Statistics Canada

— Working (Age 25-64)
— Youth (Age 0-24)
— Retired (Age 65+)

Comox Valley has a commendable list of senior services: handyDART and regular public transit, Meals on Wheels, support hotlines and counselling, nursing and health services including three long-term care facilities and St. Joseph’s hospital, recreation and seniors centres, an aquatic centre, and an elder’s College.

With these amenities (and the region’s climate and quality of life) seniors are drawn from across the Island, BC and Canada. As a result, housing for seniors is a significant component of the overall housing need. There are several senior’s housing facilities, but according to a recent CMHC survey, there are no vacancies for assisted living units and independent living units⁴. Major senior’s housing developments are focusing on the ‘campus of care’ model, such as the 2,400 unit Cumberland Green proposal, and the 230 unit Comox Valley Seniors Village under construction.

Considering the wealth of social capital and other benefits that seniors typically contribute to their communities, there are many reasons to encourage seniors to live in Comox Valley’s existing villages and town centres. With a concentration of amenities and services already in place, these areas in the Comox Valley are well positioned to be senior-friendly communities. Many seniors could be expected to prefer this, especially in British Columbia where seniors are choosing to live independently in private dwellings for longer. Preferred housing for seniors include affordability, opportunities to participate in the community, and proximity to amenities and health and transit services⁵. Local governments can encourage this ‘aging in place’ model by promoting a variety of housing choices in every neighbourhood, allowing ‘granny flats’ or secondary suites, and paying close attention to mobility and transportation barriers in building and street design⁶.

Land Supply and Major Developments

While there are numerous other constraints to development, the availability of buildable land as a whole is not likely to be one of them in the near future. A review of the several major developments underway in the Comox Valley (Figure 2.8) shows that the current proposals would accommodate housing demand for at least a few decades. Assuming that these go forward, the total number of anticipated units could absorb twenty-five years worth of demand for new housing. The five largest developments – Raven, Kensington, Sage Hills, Coal Valley, Crowne Isles and Bell Group- propose to generate the equivalent of the forecast housing demand to 2031 (approximately 10,000 units). Considering all of the approved, planned, and proposed developments, it appears that the potential housing supply could exceed that demand. Further, the type of housing proposed does not necessarily match with the projected demographics for the area, specifically that 35% of the population will be over 65 and potentially require smaller housing types- if not now, definitely in the future.

The important consideration then is the location of planned residential growth. As it is currently anticipated, some of this growth would be located in areas located outside of existing centres. These developments will require new services and infrastructure, and the resources and commitment to deliver and maintain them for generations. There is also the potential that these projects could redirect investment away from the existing town centres, reducing the opportunity to maintain and improve them. The map on the following page illustrates the location of four of the largest current and proposed developments in the region (Figure 2.9).

Major Developments and Potential Housing Supply

Area / Development	Area	Planned or Potential Units
Bell Group (Cumberland)	NA	2,400
Trilogy (Cumberland)	312 ha / 772 acres	1,200
Coal Valley Estates (Cumberland)	NA	1,000
Crown Isles (Courtenay)	NA	1,900
Raven (Courtenay)	449 ha / 1,110 acres	1,250
South Courtenay Local Area Plan	NA	500 (aprox)
Various proposals (Courtenay)	NA	560 (aprox)
Applications in process (Comox)	NA	303
Kensington (Area A)	373 ha / 922 acres	1,685
Sage Hills (Area A)	843 ha / 2,083 acres	3,500
Jackson Drive (Area B)	NA	51
Pacific Playgrounds (Area C)	NA	150
Total planned / potential units		14,499

Figure 2.8

Proposed Major Developments

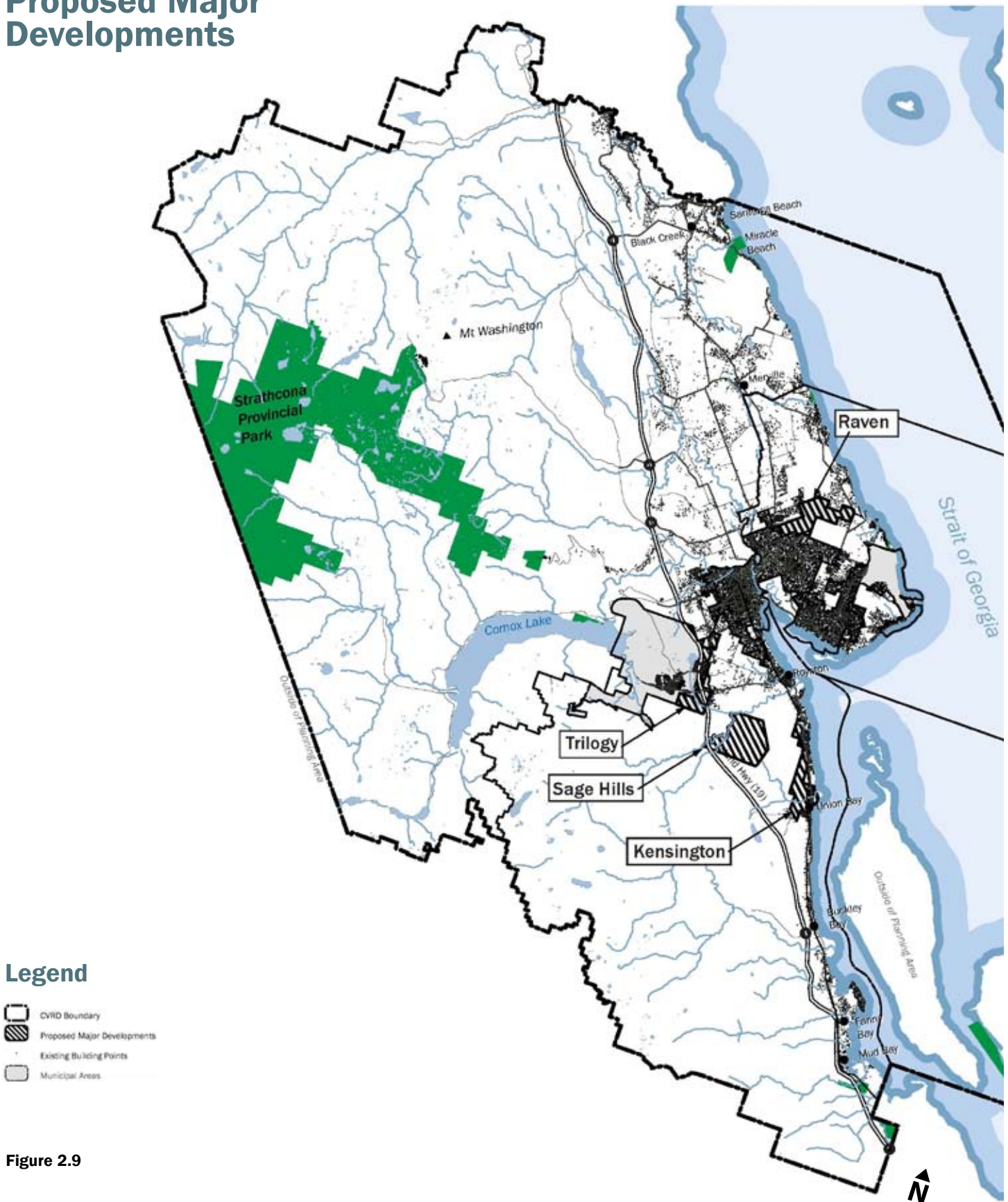


Figure 2.9

Housing Costs and Affordability

Affordable housing refers to a continuum of housing opportunities, ranging from social housing to market housing⁸. Affordable housing includes market housing and rentals that are accessible to families with lower than average incomes.

In the past ten years, average and median home prices have more than doubled.^{9,10} Average family incomes have also increased, but at a much lower rate, while the cost of borrowing money to purchase a home has decreased (Figure 2.10). On the balance, the real cost of owning a home has increased – monthly payments on a ‘median-priced’ home purchased in 2008 at 5% interest would be several hundred dollars higher than on a ‘median-priced’ home purchased in 1998 at 10% interest.

CVRD Home Sales Prices & Family Income

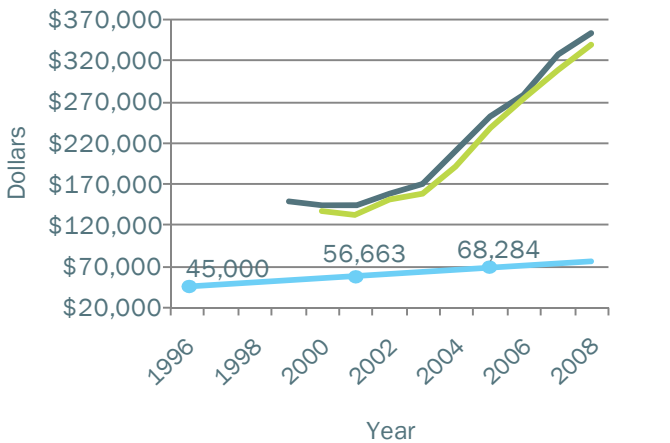


Figure 2.10

Source: Statistics Canada
Vancouver Island Real Estate
Board Annual Reports

— average home sales price
— median home sales price
● average census family income

A standard measure of affordability is the amount of income that a household puts towards rent and repairs. Affordable housing should require less than 30% of household income. As home values and costs have increased, homeowners have been putting more of their income into housing, while renters have put the same or less of their income into housing (Figure 2.11). In 2006, over 20% of owner-households and over 40% of renter-households were paying over 30% of household income for housing. Since then, home prices have continued to increase.

% of Households Paying >30% of Income for Housing

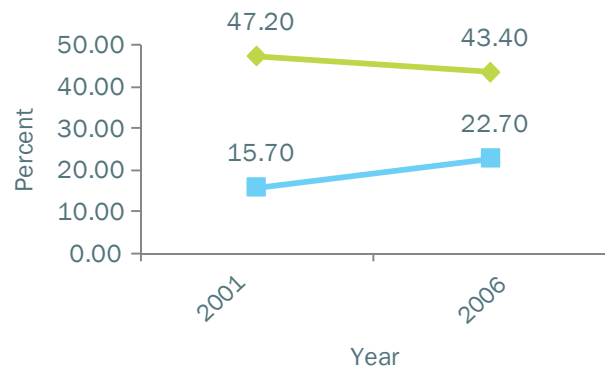


Figure 2.11

Source: Statistics Canada
2007, 2006 Community
Profiles. 2006 Census

— Tenant households paying over 30% of income
— Owner households paying over 30% of income

Rentals are an important part of the housing access continuum, and as rental units have been converted to condos, the availability of rental housing has decreased (Figure 2.12). In October 2008, rental vacancies in Comox-Courtenay were just over 1%¹¹, an increase from 0.5% in October 2007. Overall, vacancies remain low and rents have remained steady or are rising, indicating a strong demand for rental options¹². The decrease in renter households paying over 30% of their income could be attributed to a number of factors, including the increased number of higher-income families remaining in the rental market as home prices escalate. It is worth noting that many housing agencies and affordable housing groups generally consider vacancy rates below 2% to be functionally a 0% vacancy rate.

Housing Tenure

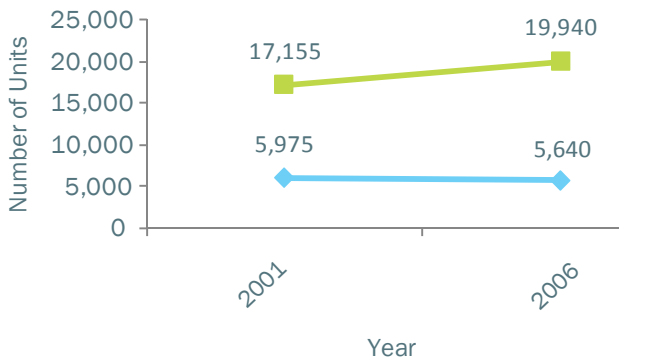


Figure 2.8

Source: Statistics Canada
2007, 2006 Community
Profiles. 2006 Census

—◆— rented dwellings
—■— owned dwellings

Existing Housing Policies

The Regional District and all three municipalities include some policy provisions for affordable housing, rental housing and special needs housing in their Official Community Plans. Figure 2.13 below summarizes each local government’s housing policies.

Affordable, Rental, and Special Needs Housing Policies

	Included as OCP goal or objective	Specific OCP strategies	Affordable housing Policy in OCP	Advisory committees or other organizations
CVRD: Rural Comox Valley OCP 1998	✓	<ul style="list-style-type: none"> Density bonus Mobile Home Parks Secondary Suites 	—	<ul style="list-style-type: none"> Commission on Homelessness Affordable Housing Society Social Planning Society Homelessness Task Force
Courtenay	✓	<ul style="list-style-type: none"> Amenity contribution Modified DCC fees Secondary Suites 	✓	
Comox	✓	<ul style="list-style-type: none"> Density bonus Amenity contribution Multifamily zoning Secondary Suites 	✓	
Cumberland	✓	<ul style="list-style-type: none"> Multifamily Coop housing Secondary Suites 	—	

Figure 2.13

Courtenay and Comox both have specific Affordable Housing Policy sections in their OCPs. Cumberland addresses affordable housing through provision of housing choices but does not contain specific affordable housing policies. The Regional District addresses affordable housing through a series of policies in land use and settlement.

Courtenay and Comox's Affordable Housing Policies share and recommend the following planning strategies:

- Promote secondary suites and secondary residences;
- Promote infill development in existing neighbourhoods;
- Prevent the loss of rental housing stock, specifically by limiting strata conversions of existing rental units (Courtenay sets a minimum threshold of 2% vacancy, while Comox's threshold is 4%);
- Require some affordable housing provision from future developments; and,
- Create multi-party affordable housing programs/projects.

In 2007, the Town of Comox council passed a resolution to implement the Housing Affordability Strategy. The strategy promotes affordable housing creation through:

- New zoning for narrower frontages to reduce per-lot infrastructure costs;
- Legalized secondary suites;
- Reduced rezoning fee for secondary suites (from \$1,650 to \$500);
- Rezoning application for more than 4 units or lots, will require applicants to provide an affordable housing amenity as a component of the development (effective as of April 1, 2008);
- Support for existing rental housing stock through strata conversion policies.

Courtenay's Affordable Housing Policy also recommends, but does not require, additional planning strategies such as inclusionary zoning and reduced fees for affordable housing units or projects. Courtenay also recommends the following advocacy strategies:

- Advocate for the elimination of provincial property transfer tax for first-time buyers and affordable housing units;
- Advocate that provincial property tax transfers be allocated to an Affordable Housing Reserve Fund for the Comox Valley;
- Work with other local governments and the regional district to harmonize the development, registration and approval process for the provision of Affordable Housing;
- Coordinate the sharing of housing information with other local governments and non-profit organizations and the development industry; and,
- Work with the development industry to explore ways to reduce costs in providing affordable housing.

Cumberland encourages a range of housing types (multi-family, co-op housing, secondary suites) that together can work to provide a range of housing choices. Affordability has not been as large a concern in Cumberland because real estate market conditions have kept home prices here lower, and therefore specific affordability provisions have not been set.

The Regional District encourages affordable housing through a series of policies appropriate to a rural setting through:

- Density averaging, density bonusing or density transfer to encourage affordable or special needs housing.
- Permissions for mobile home parks.
- Encouragement of affordable housing provision throughout the Plan area and innovation in the provision of affordable housing.

Housing and the RGS

In the past several years, the Comox Valley area has produced almost every type of residential development, from multi-family infill in downtown centres, to conventional rural suburban subdivisions and expansions, to large-scale greenfield projects which seek to create entirely new neighbourhoods outside of the traditional town and city centres in previously undeveloped areas.

While many debate that growth management policies increase the cost of housing by limiting the supply of land, the reality is that good growth management policies can increase the supply and variety of housing while reducing the public costs of providing services and increasing the viability of private and public services¹³. The absence of a growth management policy can result in oversupplies of a single type of housing where housing choice is simply not based on proximity to services or amenities (i.e. 'Drive until you Qualify').





Trends and Issues

This section summarizes major housing and housing affordability trends and issues identified through chapter research. It must be noted that, given the speed and scope of current market changes, forecasting housing trends and their potential impacts is challenging. Although the full implications of the current recession are difficult to estimate, most of the housing issues identified in this section will likely remain over the medium-term.

Housing Supply: Assuming that that current economic trends do not continue over the long term, the anticipated market housing supply is prepared to deliver housing for the next two or three decades. Less certain is whether this housing is in the right location, matches the needs of the population, and would provide adequate affordable housing options. Given the projected demographics for the area, unit counts alone will not meet the demand-side for housing. It is important that a range of dwelling types be developed including condos, rentals units, and multiple-dwelling units in addition to the planned single-family dwellings.

Affordability: Despite affordable housing policies in both Comox and Courtenay, housing affordability remains a major and growing concern in the region. In the rural areas affordable housing for farmers- for workers and family members remains a challenge. Although there are a number of policies in place that engage this issue in various ways, they have only recently been implemented and have not maximized the opportunities that existed during the recent housing boom.

Housing Choice: A diversity of housing choice means that there are market housing options in all price categories, as well as non-market options. Recent developments and proposals have shown a strong increase in the market supply of condos, apartments, and multi-family housing options, as well as a continued supply of single family housing. Development policies for the CVRD and three municipalities support the provision of secondary suites and multifamily infill. In the rural areas affordable housing is primarily provided through density bonusing or density transfer and the permission of mobile home parks.

Non-Market Housing: Though Comox and Courtenay recently introduced housing policies that would help create more non-market options, this option is still very limited in the region and there are no coordinated efforts to provide this type of housing in the region. A regional strategy would enable the local governments to coordinate a response and combine resources to better address this important issue.

Rental Housing: As sale prices have increased, many existing rentals have been converted to condos or were renovated to command higher rents. The region has seen the supply of rental options diminish over the past few years and very few if any purpose-built rental units have been constructed. Currently, over 40% of renter-households are paying over 30% of their income on housing costs. While secondary suite policies have been introduced, the supply of rentals in general remains extremely low.

Seniors Housing and Amenities: Supportive housing such as assisted living and independent living are at extremely low vacancy rates, and senior's housing in general will continue to be in demand for decades. New development is clearly responding to some of that need, but a majority of planned units are located away from existing communities. Isolated and dispersed seniors, with reduced opportunities to participate in the community, will require satellite services and/or expanded transit services. Existing communities would benefit by attracting new seniors and helping all seniors 'age in place'. A senior-friendly community would seek to concentrate support services, recreational activities, and commercial and community centers in areas where a variety of housing options and transportation options are available¹⁴. The existing villages and town centres are well positioned to be senior-friendly communities and should consider their interests in allowing new housing and senior-specific housing to be dislocated from existing communities.

Housing Location and Major Developments: Most of the new housing proposed by major developments is located in un-serviced, greenfield areas without current transit connections and extremely limited bicycle and pedestrian connections to existing centres. Though most of them are located within the regional road and transportation networks, in many cases they are not contiguous with the existing core areas (the three municipalities) and instead propose to create new, 'complete' communities with local amenities and services. While this objective is desirable in any community and not to be discouraged, the coordination of housing with amenities and services will become more difficult and possibly attenuated as the population becomes more dispersed. The proposed commercial services may also compete with existing centres, particularly if auto-oriented, large format retail is permitted in those developments adjoining the Inland Island Highway.

Points for Discussion

The Comox Valley will need to develop a broader range of housing types and be more aggressive in ensuring that housing remains affordable to ensure that local communities remain vibrant, strong and healthy. There are numerous opportunities through the RGS for the Comox Valley to better provide and encourage the development of housing opportunities for people in all stages of life, different family types, a range of financial situations, and for individuals and families with special needs. There also needs to be recognition that solutions and responses to housing affordability will vary from the more urban areas to the rural areas. Each area needs to be addressed within its unique context. Ensuring this diversity of safe and secure housing opportunities will help the Comox Valley retain working families, attract new businesses and help local communities to build and maintain services and amenities.

When considering the housing and housing affordability trends and issues identified in the previous section, the points for discussion below could be considered while formulating the RGS.

Establish the central role of housing in sustainable community development.

Complete and more sustainable communities include a wide range of housing options and choices for rural and more urban areas. In both cases, housing should be located in close proximity to employment, services and amenities and recreation opportunities to encourage walking between destinations. In more urban areas, consideration should be given to creating housing that will accommodate densities high enough to support local commercial services and public transportation. In more rural areas this means preserving land and permitting more affordable housing choices such as mobile parks. The central role of housing in creating 'complete' communities could be addressed through such strategies as:

- Maximizing planned housing capacity near existing services and amenities.
- Allowing new growth centres only where they will complement or enhance regional infrastructure.
- Requiring new growth centres to be 'complete communities' as defined above.
- Reviewing and harmonizing local and regional government housing policies to expand and diversify regional housing supply based on mutually agreed upon growth targets for each local area.
- Establishing specific implementation targets for types and tenures of housing for the regional district and local governments to ensure a range of housing options within designated growth areas (i.e., review OCPs, Zoning, Subdivision, and Local Area Plans).
- Ensuring a range of affordable home options in the rural areas and a diversity of tenures and type.

Promote opportunities for affordable housing.

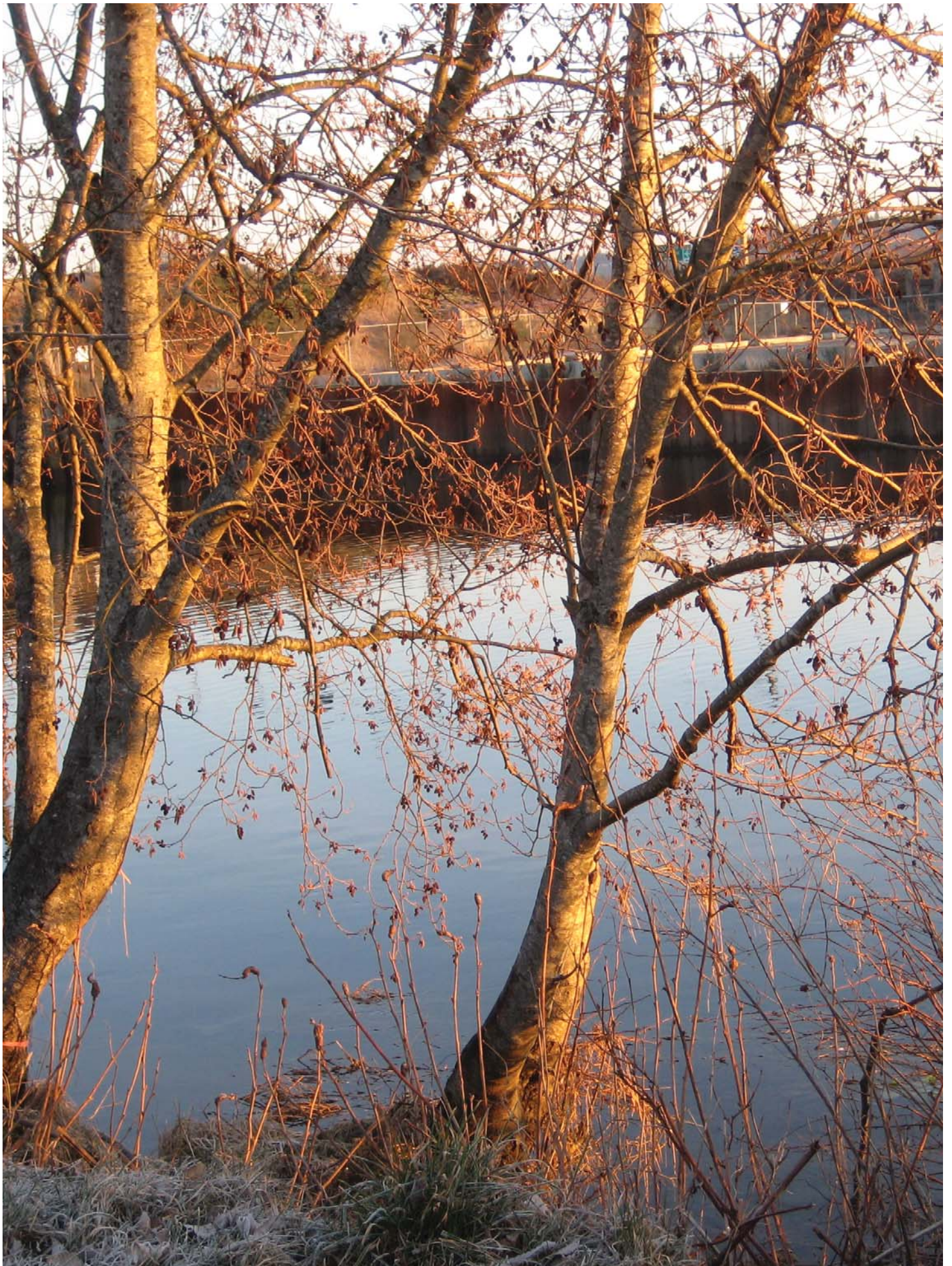
Affordable housing opportunities are a critical component of more livable, complete communities. The creation, maintenance and ongoing development of affordable housing in the Comox Valley could be addressed through such strategies as:

- Establishing affordable housing as a key regional planning concern by including a specific Affordable Housing section in the Regional Growth Strategy.
- Adopting a region-wide, formal definition of affordable market and non-market housing (i.e., Affordable housing is housing that does not cost more than 30% of a household's gross monthly income).
- Supporting the creation of a regional Affordable Housing Advisory Committee and a regional Affordable Housing Reserve Fund.¹⁵
- Reviewing and harmonizing local and regional government affordable housing policies to incentivize affordable housing goals.
- Clarifying local and regional roles by establishing affordable housing targets for each local area.
- Working to harmonize the incentives or requirements for major developments to provide affordable housing.¹⁶
- Encouraging local governments to strengthen their provisions for developing affordable housing in new OCPs and other bylaws, such as those recommended by the Comox and Courtenay Affordable Housing Policies, and developing a Regional Affordable Housing Strategy.
- Review affordable housing options in the Regional District areas to assess gaps and revise permitted uses accordingly.

Support the creation of senior-friendly communities.

Affordable, accessible and appropriate housing for the Comox Valley's growing population of seniors is a major issue for the region, both through in-migration of retirees and the region's aging population. Developing senior-friendly housing opportunities and communities would help ensure an active, healthy and engaged seniors population. Supporting the development of such senior-friendly communities in the Region could be addressed through such strategies as:

- Establishing a Seniors Housing and Services Advisory Committee to monitor trends and issues, and recommend policies and actions relating to maintaining a senior-supportive community.
- Developing criteria for senior-friendly or senior-specific developments within the region, especially as they relate to the provision of regional and local amenities and services. Criteria should require minimum standards for mix and proximity of services and amenities.
- Encouraging local governments to review policies relating to senior housing and services and identify local services gaps.
- Identifying regional service gaps for seniors and recommend objectives for developing those services that are coordinated with transit and growth management plans.



CHAPTER 3

Local Economic Development

Introduction

Economic Profile

Employment and Labour

Employment Estimates

Long Range Job Forecasts

Distribution of Employment

Socio-Economic Indicators

Building and Development

OCP Policies

Rural Comox Valley OCP

City of Courtenay

Town of Comox

Village of Cumberland

Economic Planning and Development Agencies

Trends and Issues

Points for Discussion

Introduction

A healthy, strong and diverse local economy is one of the cornerstones of a more liveable community. A strong economy attracts new employment, helps to retain existing jobs, and creates a solid tax base to provide and better support local service delivery. Without a strong local economy, local governments can have difficulty funding important services, residents can be forced to work further from their homes and overall community livability can suffer.

The regional economy is relatively diversified compared to other north Island communities. Retail services, government, health care and tourism are all significant local drivers, with most employment centred in and around the Courtenay-Comox hub. Forestry, agriculture and other resource industries are the key sectors in more rural areas.

As with the larger provincial and global economy, the Comox Valley experienced relatively robust growth over the past four years. This growth and development was fuelled in part by increased real estate investment and retirement migration from Alberta – which in turn was aided through new, direct flights from Calgary and Edmonton to Comox.

This growth created considerable development interest and numerous large-scale mixed-use projects have been approved, planned or proposed. While planned and proposed build-out for the five largest developments – Trilogy, Kensington, Sage Hills, Coal Valley and Bell Group – extend out to 2015 and beyond, it is worth noting that the number of housing units they propose (approximately 9,700) is roughly equal to the forecast housing demand as discussed in the Population Chapter (approximately 10,000 units by 2031). When considering the additional smaller approved, planned and proposed developments, it appears that current development (planned and proposed) could be greater than what forecast growth could support (see chapter 2).

The current and emerging recession, of course, has had considerable impacts on the region and will likely continue to have increasing impacts as it unfolds. To date, several medium-sized residential developments have been cancelled and/or scaled back.

The current economic recession and associated emerging trends are discussed in this chapter. However, it is worth noting in this introduction that the full scale of the recession has yet to be felt in the region. Construction, tourism and retirement in-migration are three of the region's key economic drivers. Each has been impacted by the current economic situation, although in two of the areas – tourism and retirement – the impacts will likely not be fully known until the end of the current calendar year. While forecasts on economic recovery vary from six-months to 10-years, and many analysts disagree on potential sector impacts, reasonable and prudent analysis demands that the current conditions should not be discounted as a short-term aberration.



Economic Profile

The following section illustrates employment, labour statistics and other socio-economic data at the region-wide scale and at the sub-regional scale of Courtenay, Comox, Cumberland and the three Electoral Areas¹.

Employment and Labour

Figure 3.1 illustrates employment by general occupation and industry classification.² It shows that while the local economy is relatively diversified, retail and business services are the major sectors and key local drivers.



Region-wide Employment by Occupation/Industry Sector in the Comox Valley (2006)

Occupation	No. of jobs	% of jobs
Sales and service	7,915	29%
Trades; transport and equipment operators and related	4,235	15%
Business; finance and administration	3,840	14%
Management	2,640	10%
Social science; education; and government service	2,120	8%
Occupations unique to primary industry	2,175	8%
Health	1,875	7%
Natural and applied sciences and related	1,340	5%
Art; culture; recreation and sport	775	3%
Occupations unique to processing; manufacturing and utilities	705	3%

Industry Sector	No. of jobs	% of jobs
Other services	6,600	24%
Business services	4,005	14%
Retail trade	3,960	14%
Health care and social services	3,195	12%
Agriculture and other resource-based industries	2,420	9%
Construction	2,440	9%
Educational services	1,905	7%
Finance and real estate	1,360	5%
Manufacturing	1,200	4%
Wholesale trade	520	2%

Figure 3.1

Source: Statistics Canada 2006

Figure 3.2 breaks down employment by industry classification (NAICS) on a sub-regional level. It illustrates the importance of CFB Comox to Comox (employment there is picked up in 'Other Services') and shows that agriculture and other resource-based industries are larger employers in the Electoral Areas and Cumberland. The construction sector is also larger in the Electoral Areas and Cumberland

Comox Valley Employment by Industry Sector (2006) – Sub-regional

Industry Sector	CVRD	Areas A, B, C	Cumberland	Comox	Courtenay
Total experienced labour force 15+	30,080	12,775	1,455	5,430	10,420
% Other services	24%	18%	17%	31%	26%
% Business services	14%	15%	11%	14%	13%
% Retail trade	14%	13%	18%	11%	17%
% Health care and social services	12%	10%	15%	14%	12%
% Agriculture & resource-based ind.	9%	13%	11%	5%	7%
% Construction	9%	10%	8%	4%	4%
% Educational services	7%	8%	6%	7%	6%
% Finance and real estate	5%	5%	3%	5%	5%
% Manufacturing	4%	5%	8%	4%	4%
% Wholesale trade	2%	2%	2%	1%	2%

Figure 3.2

Source: Statistics Canada 2006

Due in part to increased awareness around food security and emerging market opportunities for specialty organic and value-added products, agriculture has become a more significant and locally valued community economic driver. The Comox Valley Regional Economic Development Society has identified agriculture and related value-added industries as a key economic sector to promote and support. The area is home to numerous farming, livestock and value-added producers (e.g., wineries, cheese makers, etc.).

The following figure (Figure 3.3) provides an overview of the industry in the Comox Valley (2005) based on Ministry of Agriculture, Food and Fisheries data. As it illustrates, farming is a major economic activity that generates almost \$27 million in revenues (gross farm receipts), but per-acre/per-farm revenues are relatively low (\$60,000 on average).

Comox Valley Agricultural Facts

Average Farm revenue (per acre)	\$797
Number of Farms	445
Average Farm Size	76 acres
Agricultural Land Reserve	99,503 acres
Total Area Farmed	33,583
Total Farm Capital	\$259 million
Total Gross Farm Receipts	\$27 million
Total Cash Wages Paid	\$6 million
% Finance and real estate	5%
% Manufacturing	4%
% Wholesale trade	2%

Figure 3.3

Source: Statistics Canada 2006

Tourism is another major service employer in the region. The Comox Valley Economic Development Society estimates that the hospitality/tourism industry provides employment for approximately 1,800 people, or about 6% of the labour force. Based on BC Tourism data, the society estimates that visitors to the region generate \$85 million in expenditures annually. This figure may need to be adjusted in the near future to reflect any changes in tourism caused by the current economic downturn (e.g. if fewer people visit the region, or visit for shorter periods).



Employment Estimates

Figure 3.4 illustrates estimates of past and current employment in the region by industry sector contained in the Comox Valley Labour Needs Assessment Report (February 2008)³. When accounting for individuals who reported working in a different census subdivision (i.e., out of Comox Valley) or out-of-province, the job totals align fairly closely with Census Canada's estimates. Labour mobility statistics also indicate a cohesive region with little commuting to jobs outside the region (i.e., the vast majority of employed people living in Comox Valley also work in Comox Valley).

Of the eight industry sectors analyzed for the Labour Market Needs Assessment, the report identified five that could experience demand/high growth through to 2011. These included: Agriculture; Transportation & Warehousing; Construction; Forestry; Tourism-Related, particularly Accommodation & Food and Beverage. Due to the recession, the sector growth forecast by the report have not transpired, particularly for Construction and Forestry sectors where the recession's impacts have been particularly profound.

Recent sales of private forest lands in the Comox Valley for conversion to non-forestry uses like agriculture and housing development raises questions about the long term future of the forestry sector. Additionally, the coal mining industry has requested permission to complete a test drilling program in search of coal deposits west of Fanny Bay. This raises the possibility of employment in that area and potential future coal mining on lands owned by Island Timberlands, Timberwest and the Province. The Mines Act supersedes the regional district's zoning bylaws.

Comox Valley Employment Projections

	2005 est.	% Growth	2007 est.	2008 est.
Retail trade	4,261	2.0%	4,431	4,687
Accommodation & food service	2,564	2.4%	2,687	2,872
Health care and social services	2,722	3.0%	2,885	3,130
Construction	2,608	10.0%	3,130	3,912
Manufacturing	1,795	-3.3%	1,677	1,499
Finance and real estate	1,468	2.0%	1,527	1,615
Educational services	1,368	0.2%	1,373	1,382
Public administration	1,306	0.4%	1,316	1,332
Information, culture and recreation	1,069	3.0%	1,133	1,229
Transportation and warehousing	1,225	1.9%	1,272	1,341
Professional scientific and technical	1,126	1.0%	1,149	1,182
Management and administration	1,097	2.8%	1,158	1,251
Other services	1,083	0.9%	1,102	1,132
Forestry, fishing and resource-based	997	-3.0%	937	847
Agriculture	513	1.2%	525	544
Totals	25,202		26,303	27,955

Figure 3.4

Source: Statistics Canada 2006

Long Range Job Forecasts

Using the Comox Valley Economic Development Society's employment categories, preliminary, long-range job forecasts were made. The estimates considered historical employment trends, current market conditions, and projected CVRD demographic trends and population forecasts⁴. Given the RGS's 20-year time horizon, emerging global economic considerations and potentials

were also considered, such as the emergence of a low-carbon economy, increasing economic localization/regionalization, food security, etc. Due to the time lines involved and the current economic volatility, the estimates are conservative and provide a range for each category. As Figure 3.5 shows, the number of jobs in the region is expected to grow along with Comox Valley's overall population⁵, and between 12,000 and 22,000 new jobs could be expected in the region by 2031.

Comox Valley Employment Projections

	2008 est.	Projected Average Annual Growth	2031 est. (low)	2031 est. (high)
Retail trade	4,687	1.0% to 2.0%	5,892	7,391
Accommodation & food service	2,872	0.5% to 1.5%	3,221	4,045
Health care and social services	3,130	2.0% to 4.5%	4,936	8,614
Construction	3,912	0% to 2.5%	3,912	6,903
Manufacturing	1,499	0% to 1.5%	1,499	2,184
Finance and real estate	1,615	0% to 1.0%	1,615	2,030
Educational services	1,382	0.5% to 1.0%	1,550	1,737
Public administration	1,332	0.5% to 1.5%	1,494	1,876
Information, culture and recreation	1,229	1.75% to 3.0%	6,151	2,426
Transportation and warehousing	1,341	0.75% to 1.25%	1,592	1,784
Professional scientific and technical	1,182	0.75% to 1.25%	1,404	1,573
Management and administration	1,251	0.75% to 1.25%	1,486	1,665
Other services	1,132	0.75% to 1.5%	1,344	1,594
Forestry, fishing and resource-based	847	0.75% to 2.0%	1,006	1,336
Agriculture	544	1.5% to 3.0%	766	1,074
Totals	27,955		37,868	46,232

Figure 3.5

Distribution of Employment

While it is difficult to determine how many jobs are supplied by each of the Comox Valley's three municipalities and the Electoral Areas, Courtenay is the region's principal employment area.

While Comox is home to two of the region's largest employers, CFB Comox and St. Joseph's Hospital, Courtenay is home to the region's largest retail employers, the region's major commercial downtown and professional centre, most hotels, and large local government offices – the City of Courtenay, CVRD and School District 71.

The top four employers in the planning area include the Armed Forces Base, 19 Wing CFB Comox, with over 1,430 employees; School District 71 with over 1,400 employees; St. Joseph's Hospital with over 1,049 employees; and, Mt. Washington Ski Resort, the largest private-sector employer with over 950 employees in the winter months and 90 year round.

The top three retail employers include the Real Canadian Superstore with over 300 employees, Wal-Mart with 218 employees and Home depot with 120 employees. These top three major retail employers account for almost 650 jobs for the planning area.

While the topic is beyond the scope of this background paper, it is worth noting that the first round of RGS public engagement identified considerable debate within the community around the relatively recent arrival of large format, or big box retail in the region. While the main large-format employers do account for a significant number of jobs in the region, this kind of concentration of retail activity within a small number of large stores likely has some negative local employment impacts that could be explored further. A large amount of current research indicates that large format retail stores employ far fewer people per retail dollar spent than smaller, neighbourhood and "Main Street" retailers. Across Canada and the U.S., many cities and towns of comparable size to Comox Valley's urban centres have questioned whether local economic policy should encourage large stores owned by outside investors or promote smaller and locally based retailers.

Figure 3.6 illustrates the number of private business establishments in Cumberland, Comox and Courtenay (data for the Electoral Areas does not exist). Based on these figures, approximate public sector employment figures, census extrapolations, and new data from the Vancouver Island Economic Alliance, preliminary employment distribution and job-to-employment ratios (the number of jobs per each person living in the sub-area) were estimated for each sub-region for 2008.

Distribution of Total Employment by Sub-Region

	Cumberland	Comox	Courtenay	Areas A, B, C
Firms with 1 to 19 employees	195	382	984	No data
Firms with 20 to 49 employees	17	13	94	No data
Firms with 50 to 199 employees	10	6	17	No data
Firms with 200+ employees	1	2	6	No data
Est. % private employment	10	20	60	10
Est. % public employment	5	55	35	5
Est. job-to-population ratio ⁶	0.31	0.53	0.74	0.21
Est. number of jobs	800	6,400	16,200	5,100
Est. % of total CVRD employment	5	25	55	15
% Manufacturing	5%	8%	4%	4%
% Wholesale trade	2%	2%	1%	2%

Figure 3.6

Statistics Canada 2006, BC Stats 2008, Comox Valley Economic Development Society 2008, Vancouver Island Economic Alliance

A balance in the supply between jobs and population is an indication of a community's "completeness" and helps ensure that there are employment opportunities close to where people live. A range of 0.6 to 0.9 jobs per resident is widely considered a reasonable target of more complete communities. As the figure shows, Courtenay is region's principal employment hub – particularly for private sector employment. The Town of Comox is the second major employment centre and the region's principal public sector employment hub with CFB Comox and St. Joseph's Hospital

Socio-Economic Indicators

The next figure shows that the Comox Valley performs in the “middle of the pack” in comparison to other regions in BC in regard to key socio-economic indicators⁷. The rank column shows how the area compares to 85 other regions, or Local Health Areas in BC. The CVRD’s boundaries are the same as the Courtenay Local

Area Health (LHA), the smallest geographic unit for which BC Stats prepares statistical analyses. The smaller percentage of full-time, full-year workers (39.7% versus 47.4% provincially), indicates that the region’s economy likely still includes a significant number of seasonal, resource-based jobs (e.g., forestry, fishing, etc.). It also may underscore the importance of tourism to the region, which also tends to be a seasonal employer.

Regional Socio-Economic Indicators

Socio-Economic Indicator	Courtenay Local Health Area	BC	Local Health Area rank (out of 85)
Average family income	\$56,264	\$64,821	NA
Incidence of Low Income in Economic Families	11.0%	13.9%	NA
% Employable population 19-64 receiving income assistance (Sept. 2007)	0.6%	0.7%	44th highest
Households paying 30% or more on housing costs	23.8%	28.6%	52nd highest
EI beneficiaries (Sept. 2007) ⁸	2.5%	2.5%	56th highest
% Full-time, full-year workers	39.7%	47.4%	NA
% Self-employed	18.1%	14.1%	NA
25-54 Year olds without completed post-secondary schooling	45.9%	42.3%	52nd highest

Figure 3.7

Statistics Canada 2006. BC Stats 2008

The next figure breaks down some key socio-economic indicators by sub-region. Through the lower participation rates and employment rates, it indicates that Comox and Courtenay are both older communities with a larger share of retired people and seniors.

Sub-Regional Socio-Economic Indicators (2006)

Industry Sector	CVRD	Areas A, B, C	Cumberland	Comox	Courtenay
Median income '05 – All families \$	60,623	63,238	53,517	65,701	52,193
Median income '05 – lone parent families	33,893	33,893	38,988	36,529	27,274
Total population 15+ with degree %	13.3	14.6	11.1	14.4	11.5
Participation rate % ⁹	61.2	62.0	66.2	55.0	59.0
Employment rate % ¹⁰	57.6	61.1	61.9	51.6	54.8
Unemployment rate % ¹¹	5.8	5.9	6.2	6.2	7.3
Worked at home	10.4	13.7	8.4	8.2	7.8
Government transfers-% total income	13.6	11.0	16.9	13.5	16.5
% Low income after tax – all persons	8.0	7.4	8.3	5.4	14.7
% Low income after tax – under 18	8.5	7.5	6.2	4.5	16.1

Figure 3.8

Source: Statistics Canada 2006

Building and Development

As with the province as a whole, the Comox Valley housing market is declining (number of sales and average sale price) after a period of strong growth over the past several years that peaked in spring/summer 2008 due to the recession and housing market correction. Much of the real estate market's growth was driven initially by younger buyers looking for more affordable living with urban amenities and later by out-of-province retirees attracted by the climate, relative affordability, services and daily scheduled air service to Calgary, Edmonton and Downtown Vancouver.

The number of residential home sales fell 74% from February 2008 to February 2009, by far the largest drop of any community on the Island. The low turnover of properties in the Comox Valley is a major concern of realtors. In fact, the figure of only 20 sales in February 2009 is the lowest recorded since the local real estate board first started issuing statistics in 1996. While a statistical anomaly caused by the low number of properties sold resulted in what appeared to be an uptick in home prices of 7% in February 2009 (i.e., the 20 houses that sold were on the higher end of the market), average home prices have declined across the entire north Island region by an average of 13% over February 2008. Demand for housing has also resulted in the conversion of campgrounds and marinas in rural areas for residential condo development.

The value of residential, industrial, institutional/government and commercial building permits in Comox Valley grew almost 300% between 2001 and 2007, totalling \$143 million in 2007. However, since the economic downturn, total building permits have declined 18% between 2007 and 2008. During that period, residential permits declined 13%, while industrial permits declined 30%. The value of commercial permits was stable.

Three large-scale real estate development proposals in various stages of progress are worth noting.

Trilogy at Cumberland: A \$25 million, multi-use development located at the junction of the Inland Island Highway and the Comox Valley Parkway. The 308 hectare site is proposed to include up to 2,400 housing units (single family, multi-family, townhouses and apartments), small- and large scale retail (potentially some big box), office space, a golf course, and a casino/hotel/conference Centre. Necessary amendments to Cumberland's OCP were approved in February 2007 and the rezoning is at third reading. Prior to current market conditions, the first two phases were projected to be completed in 2011, with a 10-15 year time horizon for the whole project.

Kensington Island Developments: A 405 hectare mixed-use, golf-course development located in Electoral Area A in Union Bay on either side of Highway 19A. As proposed, the development would include approximately 1,685 residential units (single-family and multi-family), 260 vacation units, a 27-hole golf course, hotel and commercial retail space. Site clearing for the 27 hole golf course was initiated in 2008.

Sage Hills: A conceptual development to create a "state-of-the-art, sustainable community" on 815 hectares adjoining the Highway 19 near Cumberland. While no formal development application has yet been made, the anticipated proposal includes 3,500 units of housing, a private K-12 boarding school, and a large, private sports academy that will integrate junior, collegiate, adult/corporate and professional athletic and leadership. Sports under consideration include hockey, skating, golf, soccer, baseball, basketball, mountain sports and performance training.

OCP Policies

This sub-section provides a summary of local and regional economic development policies and plans. All of the local OCPs contain some economic development policy or strategy directions although for the most part they are not particularly extensive.

Rural Comox Valley OCP

The Rural Comox Valley OCP identifies the following general land use and economy goals, objectives and policies:

Land Use and Economy Goals

- To encourage economic activities that utilize the resources of the area and which complement the environmental characteristics and natural qualities, culture, and geographic setting of the Comox Valley.
- To encourage the stewardship of the land, forest, agriculture, fisheries, mineral, and aquatic resource bases.

Land Use and Economy: Objectives and Policies

- To encourage economic development which is consistent and compatible with the environmental and settlement policies of this plan.
- To promote a match between job creation and the employment needs of Comox Valley residents.
- To support the expansion and diversification of the local economic base.
- To encourage and facilitate the development of home-based and small businesses.

City of Courtenay

The City of Courtenay's OCP includes as part of its vision to be "the centre of commerce for the Comox Valley." While the document contains no specific economic development chapter, the Industrial Development section does recognize the importance of working "toward a more diversified economy" and "continuing existing economic activities." The strategies identified under the Industrial Development section include the following:

- Identify nodes of commercial activity and adhere to those as the only places for commercial development.
- Identify lands that could be zoned for light industry, and put out the message that Courtenay welcomes clean industry
- Encourage the development of value-added industry in forestry and aquaculture.
- Support community economic development strategies that focus on locally owned and operated businesses and recognize educational and cultural/arts initiatives as having significant growth potential.

Perhaps Courtenay's most significant economic development policies are found in the OCP's Growth Management section where it states:

- [Courtenay] will position itself as the regional commerce centre of the Comox Valley promoting new and existing industries to expand economic opportunities for growth and development within the municipal boundaries. As such, the City will oppose commercial or industrial developments on its fringes, along the Comox Valley Parkway, the Inland Island Highway or the Island Highway where it may lead to urban sprawl and undermine the existing tax base.

Town of Comox

In the Town of Comox, economic development policy in the OCP is limited to the following strategy statement:

- The Town currently contributes towards the operation of the Comox Valley Economic Development Society. Council may consider and act on recommendations from that Society (or its equivalent) if it feels such action is in the interest of the Town. It may encourage the connection to the sea, local shopping opportunities of a diverse nature and development of tourist potential.

Village of Cumberland

Cumberland's OCP contains an entire chapter dedicated to economic development. Recognizing that their local economy requires "considerable attention," Cumberland's overarching economic development goal is to "develop a robust local economy by capitalizing upon our natural environment and promoting a greater commercial diversification within the local economy." This is to be achieved through the following objectives:

- Create a welcoming and supportive business environment within the Village;
- Build upon both the arts and the natural environment as major sources of new economic opportunities for the Village;
- Preserve the Village's working forest lands as an integral component of our economy;
- Encourage new commercial activities and industrial activities; and
- Accommodate new industrial activities in Comprehensive Planning Areas outside the Historic Village.

Economic Planning and Development Agencies

There are three economic and business development and support organizations in Comox Valley: the Cumberland Chamber of Commerce, Comox Valley Chamber of Commerce and the Comox Valley Economic Development Society.

The Cumberland Chamber of Commerce is an 85-member organization that is closely aligned with the Comox Valley Chamber of Commerce. The organization provides a variety of member support services, including area marketing and small business retention support. They also operate a tourist information centre.

The Comox Valley Chamber of Commerce is BC's second largest with 758 member businesses. The organization provides a variety of member services and benefits and community services. Guided by a "living" Strategic Plan, the organization seeks to create and sustain programs designed to help member businesses build relationships and create strategic alliances that will promote economic growth. They also operate a tourist information centre.

The Comox Valley Economic Development Society helps supports economic development in the Comox Valley focusing on business and investment attraction. The non-profit society was formed in 1988 and receives annual funding from the Regional District and municipalities. In 2006, the society released its own Economic Development Strategy and Implementation Plan with the following objectives:

- Establish a strong food and beverage processing cluster;
- Encourage development of an air transportation cluster;
- Facilitate development of knowledge-based and environmental technology businesses;
- Undertake strategic tourism destination and product development initiatives;
- Capitalize upon opportunities associated with the 2010 Olympic Winter Games; and,
- Stimulate further development of value-added wood products.

A fourth organization, the Vancouver Island Economic Alliance (VIEA), is a new collaborative partnership intended to spearhead regional economic development for Vancouver Island and “provide a platform for Island communities, First Nations, businesses, and other key stakeholders to collaborate on a broad-based economic development programs.” The group is one of three prototype economic development partnerships being developed with support from the Province’s Ministry of Economic Development.

Trends and Issues

This section summarizes major economic development trends and issues identified through chapter research. Of course, with the current and growing recession, there are considerable and emerging economic challenges facing Comox Valley and the province as a whole. Given the speed and scope of the market changes, forecasting their potential impacts is challenging. Although the full scale, scope and length of the recession is not known at this time, potential impacts and the implications for regional growth and growth management can not be underestimated.

The Comox Valley, along with other Island communities, has weathered previous recessions and the challenges associated with the movement from a more traditional, resource-based economy (i.e., forestry and fishing) to a more diversified, service-based economy (i.e., retail, tourism, health care, government services, etc.). Discussions with regional economic development stakeholders and the community-at-large has also revealed a strong commitment to local, regional-based economic development that seeks to minimize economic leakages (i.e., money that 'leaks' out of the local economy to pay for goods and services that are produced outside the region), while developing a more diversified economy that retains, supports and adds value to existing industries and businesses.

Key regional economic trends and issues are summarized below

Well-defined region: As a region, Comox Valley is a very well defined place with a clear regional identity and regional economy. This is a major advantage over other places where boundaries overlap or are not so clearly articulated, or within more bedroom communities where residents commute in and out of the region for work (and often services).

Economic development capacity: With multiple, community-based organizations and business groups, the region boasts growing local economic development capacity and expertise. While some of the groups do not traditionally work together, or could work together more collaboratively in the future, collectively the groups represent considerable social capacity that could be better harnessed for regional economic development planning and implementation activities.

Growing value-added agriculture: While agriculture remains a relatively minor economic engine, over the longer-term it is expected to increase as the demand for locally produced foods and value-added foods grows. Growing food security concerns will also help drive the growth of this sector. The Comox Valley Economic Development Society has identified agriculture as a strategic business cluster and numerous community and business groups have reported an increase in younger people getting involved in the industry. To continue supporting this sector, the issue of minimum ALR parcels and ALR land tenures (i.e. housing on ALR lands) needs to be addressed. Currently, younger farmers or those with less capital find it extremely difficult to purchase land.

Comox Airport: Although the airport experienced a decline of 2% of passengers in 2008 and numbers are expected to decline a further 10% in 2009, the airport has dramatically improved transportation options for the region and is a considerable economic development opportunity. The Comox Valley Economic

Development Society has identified airport-related businesses as a strategic cluster to foster and the Town of Comox has created an industrial area adjoining the airport for air services-related businesses. The airport and the new air services industrial land base could help attract new businesses to the region.

CFB Comox: The air base has long been an employment anchor for the larger region and will likely remain so for the future. Currently, the base is the largest public sector employer in the region. It is likely that both military and civilian employment will be relatively stable over the medium-term and, potentially could grow should the base add a long discussed marine commando unit to the base.

Employment losses: Recession-related job losses have already been felt and will likely be increasingly common across all sectors of the local economy. The hardest hit will likely include construction and tourism-related industries (e.g., food service, hotels, tour companies, etc.). Local job losses will generate negative multiplier effects through the local economy as local spending decreases.

Decreasing construction: With the decrease in regional housing starts and the likelihood of delays to major projects construction job losses could be significant, up to 20% from 2008 peaks. Such significant job losses would be consistent with provincial construction job trends.

Declining tourism: Tourism is a major employer in the region. Due to current economic conditions, signs of slowing and declining growth are evident, including a decline of passengers through Comox Airport (down 2% 2008 over 2007 and forecast to fall 10% this year), the withdrawal of service to Comox by AC Jazz in September 2008, and a downturn in room revenue over 5% over the year previous despite the addition of new hotels in Courtenay. The US travel market – a major component of the local tourism market – has also declined regionally (down about 12%). Other transportation indicators were down according BC Tourism’s most recent statistics, including Island ferry passenger (down 2.6%)

and vehicle traffic (down 2.0%). The current recession will likely further compound tourism declines. While it is not known whether these declines are temporary or structural – at least until new data emerges following the 2009 high season – the warning signs identified by Tourism BC should not be discounted.

Reduced retirement immigration: Recent in-migration has been driven by retirees (see the Population chapter), with a large segment of this group coming from outside BC. Market declines have seriously impacted “non-defined”, market-linked pension fund holders, with the value of both employer-sponsored and RRSP funds dropping on average between 12% and 30% across Canada¹². The implications of these declines are considerable and could reduce, slow and delay retiree in-migration. Currently, only 38% of employed Canadians are covered by workplace pensions – plans established by either employers or unions to pay retirement income. In the private sector, only 27 per cent of workers enjoy such plans, according to a recent Statistics Canada study of workers aged 45 to 59. In other words, a large majority of working Canadians rely on mutual fund RRSPs and/or the sale of a home, farm or small business to support their retirement. According to Statistics Canada, many individuals may delay retirement to offset recent losses. While some of the likely in-migration slowdown will be offset by the growth of retirees in general due to an aging population, the potential of slowed retiree in-migration can not be discounted.

From resource industries to real estate: Once the mainstay of the Island economy, the forestry industry is a shell of its former self. TimberWest, the Island’s largest forestry company and the largest private landholder in the planning area is continuing a “deferred harvest strategy” (i.e., greatly reducing or, in some cases, putting off area forestry operations). The company also reduced its local salaried work force by 10%. TimberWest recently launched a wholly owned subsidiary real estate development company, Couverdon, that is seeking to develop its privately owned forest lands in and around the region – an approach with certain implications for the RGS process.

Points for Discussion

The creation of a more diverse, greener local economy will depend on all local governments working together to harmonize and coordinate economic development policies and programs. The RGS can play an important role by helping to create a clear direction on coordinating land use-related economic development policies (e.g., development cost charges, determining where new employment development should occur, and ensuring that job and employment centres are easily accessible to all residents.)

When considering the economic development trends and issues identified in the previous section, the points below could be considered while formulating the RGS.

Promote the development of a diverse regional economy where employment is close to where people live. Diverse employment centres that can support a variety of businesses and are easily accessible to a wide range of residents tend to be more successful and healthier than single use downtowns or office parks. They are more vibrant, safer and help both attract and retain businesses. Creating such employment centres could be addressed through such strategies as:

- Coordinating regional servicing to support existing employment centres.
- Developing clear and coordinated policies to support the intensification of commercial activities in existing town centres (Cumberland, Courtenay and Comox).
- Working cooperatively to develop a hierarchy of employment centres for existing town centres with specific business cluster goals and employment targets for them.
- Collaborating with BC Transit, the Province and the federal government to ensure transportation infrastructure supports the economic functions of the region.
- Developing clear and coordinated policies on service commercial development along the Island Highway (19 and 19A) to limit auto-focused development in the region.

Collaborate and cooperate on local and regional economic development research, planning and programming. Creating an attractive business-enabling environment to both attract new businesses and retain existing ones is of critical importance. Internal competition, intentional and non-intentional, between local governments or business agencies may weaken the region's collective economic attractiveness and performance. Creating a positive business-enabling environment could be addressed through such strategies as:

- Creating regionally consistent development cost charges and business permitting standards.
- Creating regionally consistent and supportive policies for the large number of home-based businesses located in the region.

- Supporting the development of a Regional Economic Development Strategy through a multi-party process involving all local governments and economic development stakeholders, including the K'omoks First Nation.
- Promoting and enhancing ongoing regional economic cooperation, collaboration and networking through the creation of a Local Economic Development Working Group made up of representatives from local governments, business organizations, K'omoks First Nation and community groups.
- Developing a supporting Economic Investment Action Plan for regional employment centres with coordinated and harmonized tax and development incentives.
- Considering whether there is a need for new business parks.

Protect and ensure an adequate supply of industrial land.

Accessible and affordable space for manufacturing and industrial operations is an important part of overall economic well-being.

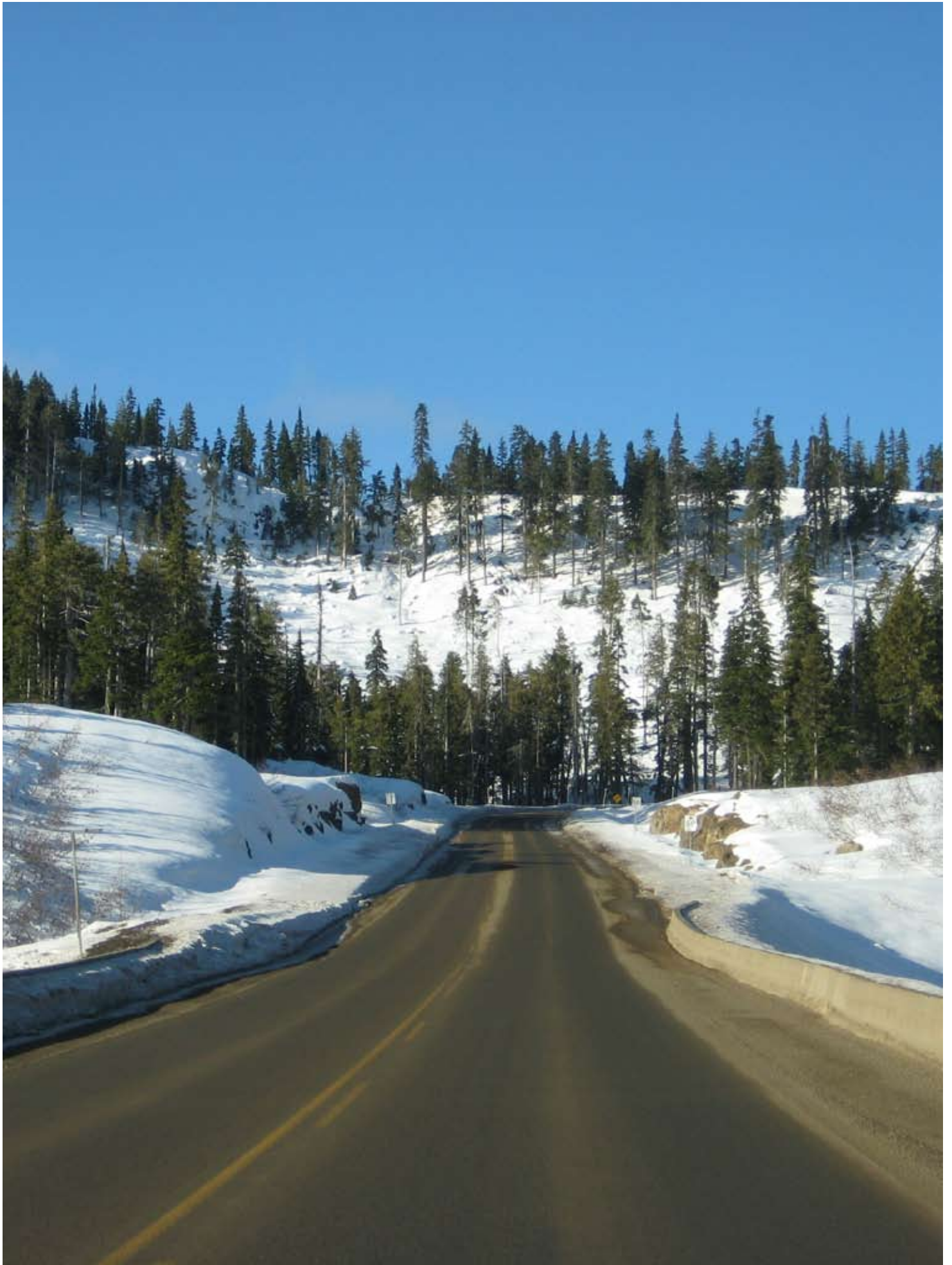
This can be addressed through such strategies as:

- Monitoring the supply of industrial land in the region with the objective of maintaining sufficient capacity to meet the needs of the regional economy.
- Utilizing an eco-industrial networking approach for industrial land development (i.e., work to co-locate businesses that can create collaborative networks to more efficiently and effectively use resources, such as materials and energy).

Support and foster continued rural and resource-based employment opportunities.

Forestry, fishing and agriculture are all important regional economic activities. Value can be added to each sector through such strategies as:

- Working with the Province and the Agricultural Land Commission to develop strategies and actions to increase the amount of actively farmed agricultural lands, and reduce barriers to agricultural viability.
- Undertaking public education activities that raise awareness of Comox Valley's agricultural and local food/value-added processing sector.
- Recognizing the long-term economic development potential represented in forest lands and limit rural encroachment onto them through regionally coordinated rural subdivision development principles and standards.
- Supporting value-added, community-based forest use applications, including, but not limited to, community-owned woodlots, eco-forestry enterprises and home-based value-added forest product manufacturing.
- Supporting the region's important mari-culture industries through supportive policies and awareness building activities.
- Considering the creation of a local agricultural research centre or program through North Island College or through an independent agency, perhaps similarly to the formally operating Oyster River Research Farm.



CHAPTER 4

Transportation

Introduction

Regional Transportation System

Jurisdiction

Introduction

Regional Transportation System

Jurisdiction

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Introduction

The form and function of regional transportation systems are vital to the sustainable growth and development of the Comox Valley. Residents and the local economy depend on transportation infrastructure, including regional highways, roads, public transit, ferry service, rail and airports. Getting regional transportation decisions right is also critical for environmental and community health, public safety and regional accessibility. Ultimately, the decisions made today will impact the way people live their day-to-day lives now and into the future. Strong public transit systems and proper land use planning make for places where opportunities to live, work, shop, eat and play are accessible to all.

In addition to providing a strategy for where and how to grow, the RGS will be a vehicle for guiding provincial transportation infrastructure and transit decisions. As such, the RGS provides an opportunity, as a region, to work out common priorities for investment in a sustainable, efficient and accessible transportation system.

This chapter reviews the transportation system in the Comox Valley and its relationship to regional growth. It begins with an overview of the regional transportation system and the agencies responsible for transportation planning. Following this, a number of issues concerning the regional transportation system and its role in regional growth are discussed. The final section outlines a number of transportation related policy ideas for the RGS to consider.

Regional Transportation System

Comox Valley's transportation system is made up of a number of distinct elements:

Highways – The most prominent pieces of the regional transportation system are the two provincial highways. The old Island Highway 19A and Inland Highway 19 connect the Comox Valley with Port Hardy at the north end of Vancouver Island and Victoria in the south. The City of Courtenay, at the centre of the Region is approximately a three-hour drive from Victoria and roughly an hour's drive both south to Nanaimo and north to Campbell River. Inland Highway 19 is a four lane limited access highway, while the old Island Highway is predominantly a two lane highway with few controlled access sections.

Grid Roads – These major roads carry traffic throughout the region and feed into the provincial highway. Similar in size and purpose to major municipal arterial roads, these thoroughfares are maintained by the Ministry of Transportation.

Municipal Roads – The municipal road network in Courtenay, Comox and Cumberland consists of arterial roads, collector roads and local roads. Arterial roads carry traffic through the city and onto provincial grid roads and highways. Collector roads collect and disburse traffic within neighbourhoods and connect to arterials and grid roads. Local roads serve local neighbourhoods and industrial, commercial and institutional areas. The municipal road network is maintained and operated by responsible local governments.

The E&N Rail Line – Both passenger and freight service are in operation on the E&N rail line, which runs between Courtenay and Victoria and is owned by The Island Corridor Foundation (ICF). This service has local, regional and national significance for its potential as a regular commuter service and cycling network. Southern Railway of Vancouver Island (SVI) is the operating

railroad for the ICF. In addition to operating daily passenger services on behalf of Via Rail Canada, SVI provides freight transport for various companies on Vancouver Island. The SVI connects to the continental railway via a rail barge between Nanaimo and Tilbury. Limited passenger services are provided on the Malahat train once a day in each direction between Courtenay and Victoria.

Comox Valley Airport – The Comox Valley Airport is located in the Town of Comox on the Department of National Defence (DND) Canadian Forces Base (CFB). It currently connects the Valley to Campbell River, Vancouver, Edmonton, Calgary, Puerto Vallarta and Cancun, and plans are underway for an additional 10 destinations over the next several years. The airport benefits from the CFB's 930 meter (10,000 foot) runway – the longest on Vancouver Island. The Comox Valley Airport Authority hopes to leverage this and other assets, including favourable weather and the draw of the Comox Valley, to grow the Airport into Vancouver Island's preferred gateway. Its current terminal building is 40,000 square feet and was constructed recently. The Comox Valley Airport Authority has plans for its expansion, including the construction of an international terminal building.

Ferries – BC Ferries runs two ferries from two terminals in the region. The first is the local Denman Island Ferry, which runs between Buckley Bay and Denman Island. The second connects the Comox Valley to Powell River on the Sunshine Coast on the Mainland. The Powell River ferry runs four times daily between the Little River terminal near the Town of Comox and the Westview terminal in the City of Powell River

Interregional Transit – Greyhound Canada Inc. operates regular bus service throughout Vancouver Island. Greyhound stations are located all along the Inland Highway 19 at Oyster River, Black Creek, Merville, Courtenay, Royston, Union Bay, Bulkley Bay and Fanny Bay. There are three busses southbound for Victoria per day and four northbound for Campbell River and beyond.

Local Transit – Local public transit is managed by the CVRD, through an agreement with BC Transit who in turn has an agreement with the private operation company, Watson and Ash Co. Transit service extends north to connect with the Campbell River transit system at Oyster River and south to Fanny Bay. The system connects to BC Ferries terminals at Little River and Buckley Bay, as well as the Comox Valley Airport. With the exception of local-level bus services in Comox and Courtenay, service levels are generally on one hour headways. Rural service between the Regional District and Comox-Courtenay is limited to four or five buses a day.

Comox Valley has seen a 135 percent increase in transit ridership since 2001. In 2008, the addition of the North Valley Connector route, which extends to Oyster River, servicing Merville, Black Creek, Miracle Beach and Saratoga Beach increased ridership by another 18 percent.

However, even with the increase in transit ridership, the mode share for transit in the Comox Valley is still quite low. The mode share for Comox Valley is 0.9% in comparison with 1.7% for Campbell River and 1.0% for the Cowichan Valley, two nearby similar sized transit systems.

The main ridership groups in the Comox Valley are students (up to grade 12) (51%) followed by adults (31%). Seniors (over 65 years of age) make up a small portion of the ridership population. The breakdown of ridership groups is illustrated in figure 4.1.

BC Transit service map



Average Weekday Ridership by Passenger Group

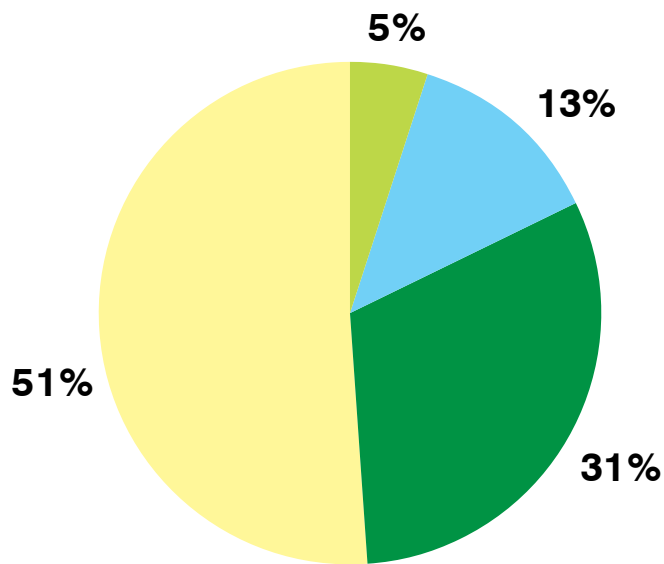


Figure 4.1

- Students
- Adults
- BC Passes
- Seniors

Weekday Route Productivity

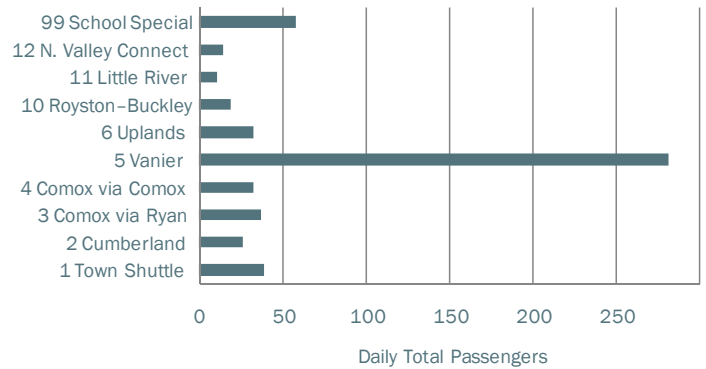


Figure 4.2

Figure 4.2 illustrates that not only are students the main users of public transit, but that some routes cater almost entirely to the student population. In particular Vanier and 99 School Special are dominated by student use. Vanier provides service to George P. Vanier Secondary School and the Comox Valley Sports Centre. The most travelled route for Adults is the N. Valley Connect that runs service through Puntledge-Black Creek, making stops in Miracle Beach and Saratoga Beach, linking Courtenay and Oyster River. The most travelled route for Seniors and BC Pass Users is the Little River route. The routes with the most diverse ridership are Comox via Ryan and Comox via Comox and Royston-Buckley.

Provincial Transit Plan - The Province has a plan to double the transit modal share in BC by 2020. This doubling is Province wide. Given that already well-served areas like Vancouver or Victoria, cannot be expected to double their transit ridership (which is already high), this means that rural or underserved areas will need to more than double their ridership in order for the province to meet this target.

Based on BC Transit preliminary projections to meet the Provincial Transit Plan goals, service levels in the Comox Valley would increase from about 25,000 hours currently to 81,000 by 2020. In terms of service on the street, this would generally mean 30-minute service frequencies, with some peak period 15-minute service. Annual ridership would increase from 540,000 to 1,700,000 over the same period. The transit mode share would increase to 2.4% by 2020.¹

In addition to public transit, there are other shuttle bus services and inter-regional bus links that run throughout the Comox Valley. Island Link Bus provides passenger express bus service between most of Vancouver Island points and BC Ferries' services at Nanaimo and Departure Bay. This service links a number of areas throughout Comox Valley with the broader Island. The Bus Link extends from Victoria to Nanaimo through Nanaimo Regional District to areas in the Comox Valley (Fanny Bay, Buckley Bay, Union Bay, Royston, Courtenay, Cumberland, Comox, Merville, Black Creek) to Strathcona Regional District and the western half of Vancouver Island.

Mt. Washington Alpine Resort Shuttle runs a daytime shuttle bus throughout the ski season. The shuttle is \$10 return and has pick-up and drop-off points in Courtenay.

Ridership by Route and Passenger Group

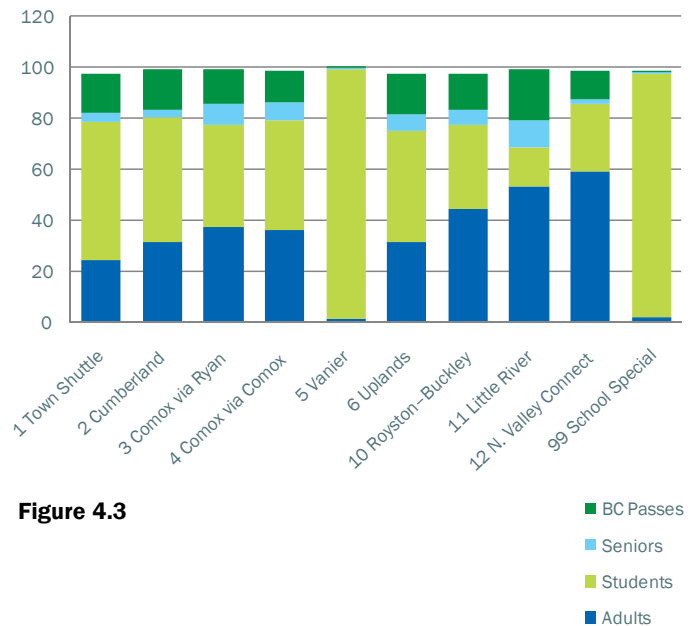


Figure 4.3

Active Transportation Infrastructure

Infrastructure that supports active modes of transportation, such as walking, running, cycling, rollerblading, and skateboarding, is vital for community health and safety. This infrastructure includes the actual transportation surface such as routes, lanes, paths, and sidewalks, as well as equipment that supports the activity, such as bicycle racks, storage locker and benches. While sidewalks are a relatively common feature in town centres, they are less common in more rural areas. There are few dedicated cycling lanes and separated paths and there is no integrated network between the town centres which makes commuting by bicycle difficult. Courtenay received provincial funding from Bike BC late in 2008 for the construction of a dedicated, separated asphalt bike path along the Idiens Greenway Extension.

Jurisdiction

Within the Comox Valley, jurisdiction over the various elements of the transportation system is split between a number of government bodies, agencies and organizations. This section reviews each level of government, concluding with the role of the Region and RGS in the transportation system and transportation planning.

Federal

Transport Canada

Transport Canada administers national health, safety and security regulations on air, road, rail and marine transportation through a number of acts and regulations. In addition, Transport Canada has a broad mandate to protect against the potentially harmful environmental impacts of transportation systems. Two federal transportation crown corporations operate within the Comox Valley - the Canadian Air Transport Security Authority which ensures passenger security at Comox Valley Airport, and VIA Rail Inc. which maintains the Malahat train service on the E&N railway. The Department of Indian and Northern Affairs is responsible for the planning, construction and maintenance of roads on Indian Reserves located in the CVRD.

Comox Valley Airport Commission

The Comox Valley Airport Commission is a federally incorporated corporation, created to oversee the management of the Comox Valley Airport for the public. It is regulated by Transport Canada.

Provincial

The British Columbia Ministry of Transportation and Infrastructure (MoTI) governs all forms of transportation in the province of BC. Legislatively, the Ministry develops and implements transportation policies and administers a number of transportation related acts and regulations. This includes creating transportation plans for the province in concert with Regional Transportation Advisory Committees. The MoTI is responsible for building and maintaining provincial transportation infrastructure, including ports (when not under federal control), highways, rural roads, and major thoroughfares such as grid roads that connect regions together. In addition, the Ministry works with other levels of government to provide funding for public transit, ferry services, and cycling networks. Roads within Indian Reserves are not public roads as defined by the Transportation Act and the Ministry's only input would concern their connection to the public road system.

Currently, MoTI is the rural subdivision approval authority (SAA) for the CVRD. As the subdivision approval authority for the rural areas, MoTI is responsible for approving subdivision layouts, road and design standards and construction. There has been ongoing discussion between MoTI and regional districts about improving the review and approval process and devolving power, in some form, to the regional district.

The Island Corridor Railway Foundation

The Island Corridor Railway Foundation is partially controlled by the Regional District. Island Corridor Railway Foundation membership is made up of representatives from five regional districts and five First Nations communities. Incorporated in 2004 and granted charitable status, the ICF's goal is to preserve and promote the E&N rail corridor as the most viable and sustainable means of freight and passenger transportation on the Island.

Railways

Under the British Columbia Railway act, MOTI has the authority to govern all railways operating solely within the province and falling under provincial jurisdiction, including common carrier, industrial and commuter railways. Thus, while the E&N railway is owned by the Island Corridor Foundation and operated by Southern Railway of Vancouver Island, its operations are regulated by the MOTI.

BC Ferries

The Coastal Ferry Act established BC Ferries as an independent commercial company under the Company Act and created the B.C. Ferry Authority, which governs the company. The Act provides for a long-term service contract between the provincial government and BC Ferries. BC Ferries operates both of the ferries that serve the Comox Valley.

BC Transit

BC Transit is the provincial crown corporation, mandated by the BC Transit Act to “plan, acquire, [&] construct...public passenger transportation systems and rail systems that support regional growth strategies, OCPs, and the economic development of transit service areas.” In the Comox Valley, public transit is overseen through BC Transit’s Municipal Systems program – a partnership between BC Transit, local government and various transit management companies. BC Transit’s role includes planning, funding, marketing, fleet management, and contracting for the operations of transit systems. The CVRD shares in funding responsibilities, approves service plans and tariffs, accounts for revenue and maintains all transit facilities (i.e. bus stops, exchanges, shelters and benches).

Local Governments

Comox Valley Regional District

In addition to their responsibilities for funding and planning public transit, regional districts have the authority to prepare regional growth strategies. Because they have no jurisdiction over transportation infrastructure, regional growth strategies are absolutely critical for the regional coordination of transportation and transit plans. The RGS can provide long range planning direction for transportation related policies in the regional district and local OCPs (OCPs) to implement provincial programs. Perhaps most importantly, the RGS sets regional priorities for transportation infrastructure and public transit, and acts as a guide for provincial and municipal investment decisions.

Courtenay, Comox and Cumberland

The Government of British Columbia grants municipalities broad discretion over the planning, funding, construction, operation and maintenance of local roads, sidewalks, paths, piers, docks and other transportation infrastructure within their boundaries. Through their OCPs, municipalities set long range land use planning and transportation objectives. OCPs must include and conform to the regional context statement set through the RGS process. The policies in the OCPs of local municipalities are developed in consultation with Regional Districts.

Transportation Related Policies

This section reviews the policies of the local and regional governments' OCPs as they pertain to transportation and transit. All local governments within the Comox Valley have a robust transportation policy foundation in their OCPs.

Rural Comox Valley OCP

The Rural Comox Valley OCP considers the provision of adequate transportation links, access and parking to be key criteria for the evaluation of Commercial, Tourist Services and Highway Services and Industrial proposals.

In terms of land use, the Rural OCP:

- Requires that Rural Settlement Areas incorporate a mix of land uses to reduce the need for the use of private automobiles, to promote alternate means of transportation, and to promote the development of self-contained communities.
- Promotes the design of a “safe, efficient and balanced transportation network” including policies that promote the development of path and trail networks, and community design guidelines illustrating safe design standards for all modes.
- Supports public transport systems that incorporate shared ridership, pedestrian and bicycle movement.
- Promotes the development of properly sited marine and air transportation facilities with minimal environmental impact.

The Regional District has no direct control over transportation infrastructure; however, the Rural OCP lays out extensive advocacy policies to encourage the Ministry of Transportation to consult with the Regional District on all aspects of transportation planning, from new highway construction to lighting standards and bicycle paths, and gives consideration to the rural character of the Plan area. Likewise, the municipalities are encouraged to coordinate with the Regional District on regional transportation matters. Further dialogue between MoTI and the CVRD may help to flag opportunities for improved coordination of standards.

In addition, the Rural OCP encourages:

- BC Transit to provide bus service or other innovative alternatives, to Rural Settlement Areas and Rural Service Centres.
- BC Ferry Corporation to maintain an adequate level of service to meet the needs of Comox Valley residents; consult with residents respecting future planning and scheduling for ferry services which affect the Comox Valley; and plan for and promote foot-passenger services and facilities.
- VIA Rail Canada, in cooperation with the E & N Railway, to upgrade passenger facilities in the Comox Valley and the road bed to facilitate greater railway speeds and crossing safety.
- Canadian Pacific Railways, in cooperation with the E & N Railway, to increase freight service in conjunction with increases in local industrial development and consider the development of local inter-modal transfer facilities to improve the linkages between rail, road and marine transportation systems.

City of Courtenay, Town of Comox and Village of Cumberland OCPs

The respective local government OCPs contain policies supporting accessible, efficient and safe transportation networks. Each has a series of policies supporting the development of transit, cycling and other active modes of transportation. The three OCPs seek to support an integrated system that works in conjunction with good land use planning to produce an effective overall system for the movement of goods and people.

Role of the RGS

The Local Government Act requires Regional Growth Strategies to consider a number of matters, many of which relate to transportation. A summary of these matters as they relate to the role of the RGS in planning for regional transportation systems is listed below.

According to the Local Government Act, regional transportation systems should be planned to:

- Avoid urban sprawl and reinforce land use decisions that ensure development that takes place where adequate facilities exist or can be provided in a timely, economic and efficient manner;
- Support settlement patterns that minimize the use of automobiles and encourage walking, bicycling and the efficient use of public transit;
- Facilitate the efficient movement of goods and people through the effective design and use of transportation corridors;
- Reduce and prevent air, land and water pollution;

In addition, a central goal of transportation systems in the Local Government Act is to make communities open and accessible to everyone. This includes a special focus on including those groups who have been historically excluded from accessible transit, such as the elderly, youth, the disabled, people of low income, First Nations, other minority groups and women (who are statistically less likely to own or drive a motor vehicle).

Trends and Issues

Like other regional districts, the CVRD faces a number of challenges in addressing regional transportation. This section highlights some of the larger trends, as well as some of the larger challenges.

Increased Transit Service – Comox Valley Transit’s incredible 135 percent growth rate since 2001 is testament to the unmet demand for transit service in the Comox Valley. The mode share of transit ridership in the Comox Valley is still low in comparison to similar areas and caters predominantly to the student population using it specifically for transportation to Vanier Secondary School and the sport complex. The BC Transit Plan to double the transit modal share in the province by 2020 means that rural or underserved areas will need to more than double their ridership. On the ground this means increasing the frequency of service to 30 minutes and 15 minute intervals, in some areas.

Transit Supportive Land Use Policies in Place – Courtenay, Comox and Cumberland have policies in place to support public transit, policies for supporting a continuous and effective road network, sidewalks and bikeways. Of the local governments, Courtenay has the strongest growth management policies in place, with policies to limit growth to within the city limits and eventually establish an urban containment boundary. The Rural OCP encourages rural settlement areas to grow into complete communities. However, there have been challenges with implementing more transit supportive complete community developments, attributed to the provincial SAA process.

Island Corridor Railway Foundation – This innovative collaboration between regional districts and area First Nations has salvaged a key piece of the region’s sustainable transportation infrastructure. The potential of the E&N railroad to contribute to the region’s environmental, economic and social objectives is significant. By growing the frequency and capacity of passenger rail trips, the railway could increase tourism and decrease car traffic, bolster the local economy and contribute to a cleaner environment.

Improvements at the Comox Valley Airport – The growth of this airport rivals the success story of Comox Valley Transit. Its incredible 30 percent growth rate between 2006-2007, has only been slightly impacted by the current economic recession and the airport expects less than a 10 percent reduction in the number of passengers it serves. The airport continues to rank first in national airport customer satisfaction surveys, and is a strong engine of regional economic growth. Over 38 percent of the people flying into the Comox Airport are destined for the region itself, adding significantly to the Valley's tourism economy. A 2007 economic impact study, found that activities at the Comox Valley Airport, combined with those of regional tourism industries and increased air access to the region, directly generate:

- 11,300 direct jobs, representing 9,100 person years of employment;
- \$237 million in wages;
- \$701 million in direct economic output; and
- \$119 million annually in tax revenue contributions to all levels of government².

Comox Valley Cycling Plan – The Comox Valley Cycling Plan, created by the Comox Valley Cycling Taskforce could be a model for cooperation between local governments. The CVCT is made up of elected members from each of the local governments in the Comox Valley supported by staff from the various local governments. Their mandate is to develop and support the implementation of a comprehensive strategy to improve cycle access within the Comox Valley, allowing all members of the community (from children to seniors) to travel safely by bicycle within each jurisdiction and to have safe access to regional cycling networks.

The Comox Valley is a large, mostly rural region – Rural transportation inherently presents planners and engineers with significant challenges. The low densities in rural regions and suburban communities make it difficult to provide cost effective, high frequency, attractive public transit. There are simply too few riders to justify fast and frequent service. User payments thus make up less of the total cost of rural transportation. In addition, supporting pedestrian and biking facilities and pedestrian and cycling destinations tend to be far apart in rural areas, making it more challenging to support active transportation.

The Comox Valley is ageing – The population in the planning area is rapidly aging, with seniors expected to be the fastest growing cohort in the study area. The seniors' population is projected to grow from 17.9% of the total population in 2008 to 26.1% in 2031. According to BC Transit younger seniors almost exclusively drive, but there is a concern as the more elderly population increases, this will create a challenge in mobility.

The Comox Valley is growing – The population of the Comox Valley is expected to grow from a population of 60,288 in 2006 to just over 85,500 by 2036. New growth should be guided to locations that can support an efficient and effective regional transportation system and facilitate active transportation options. The increase in population will require related increase in investments in transportation infrastructure and public transit if growth is not contained within core areas.

Potential growth in remote and unserved locations – While the existing centres (Courtenay, Cumberland and Comox) have grown more quickly than rural areas, new, large-scale developments may encourage new growth in widely separated locations, primarily along inland Island Highway 19. These developments will entail higher

road servicing and maintenance costs than development closer to existing communities. Additionally, growth in these locations will mean a dependency on public transit as the only way for youth, the elderly, disabled and disadvantaged populations to access existing regional service centres. Providing remote locations with public transit comes at a high cost to tax payers, places a strain on limited public resources, and can decrease overall system efficiency.

Lower density growth – Much of the proposed and planned growth throughout Comox Valley is in the form of lower density units. There is a direct relationship between the density of development and the amount of transit infrastructure required to service it. The more dispersed developments are, the greater the length of roads needed to reach them. This requires more square meters to be paved, and more equipment and labour to maintain the roads. In addition, lower density, dispersed development may decrease the cost efficiency of public transit.

Public transit has a long way to go – Transit ridership has increased (135% since 2001!), but the mode share is under 1% and below provincial averages. Although ridership has been growing rapidly, trips in the Valley made by transit amount to only 0.9% of the total trips taken. Comparatively, in the Cowichan Valley 1% of trips are made by public transit and 1.7% of trips in the Campbell River. In the province 10.3% of trips are made by transit. In terms of transit ridership, Comox Valley is quite a bit behind the provincial average. The Region performs slightly better when considering only trips taken to work, with public transit making up 1.7% of total trips taken. To meet the Provincial Transit Plan goals, service levels will need to increase from 25,000 hours to 81,000 by 2020. This would mean 30-minute service frequencies, with some peak period 15-minute service. Annual ridership should increase from 540,000 to 1,700,000. The transit mode share would increase to 2.4% by 2020.



Points for Discussion

This section presents a series of transportation policy ideas for consideration in the RGS. The ideas are set out to address the issues identified through a review of transportation infrastructure and transportation policy in the Comox Valley.

Let proper land use planning drive transportation decisions –

The key to low cost transportation infrastructure and economically efficient public transportation is intelligent land use planning. Separating services from the communities that need them, isolating employment areas from residential areas, and segregating residential areas from retail areas makes accessing them more difficult and can limit transportation options. Conversely, ensuring that homes are located within walking or cycling distance of workplaces and the services needed for daily life has a whole host of positive effects. It opens up transportation choices for everyone, including those who cannot drive or cannot afford to drive. It shortens the distance that transit infrastructure and transit must cover and reduces the associated cost burden on taxpayers. The provision of cost effective active and public transit lessens the need for cars and reduces traffic, creating positive environmental, social and economic spinoffs: less air pollution, lower global warming causing emissions, more time spent face to face with neighbours, less of a transportation burden on the poor, more efficient transportation of economic goods.

- The RGS could consider the relationship between land use planning and regional transportation planning by establishing a framework for the development of complete, well planned and serviced communities through an overall transportation plan to coordinate efforts across municipal boundaries.
- Limit or contain growth areas and require developers to pay increased transit or road maintenance development cost charges.
- Review the commute patterns for the Comox Valley to understand who is living and working within the region, who is accessing regional transit and why.
- Approaches to road standards and subdivision design should prioritize pedestrians and transit use to create more liveable neighbourhoods and communities in the rural areas. As such, the RGS process could include a review of the SAA process.

Manage development at highway exits – Highways and major thoroughfares attract growth. High value industrial, commercial and retail uses are drawn to the captive market along these routes, just as the easy access to major transit ways attracts residential development. Highway exits, as the intersection between major transportation routes, are, for the same reasons, especially conducive to growth. However, these locations are often isolated from existing communities, limited in their potential to develop, and are therefore poor locations for growth.

The RGS could consider the special management of development at existing highway exits, and consider moving away from the addition of further exits.

Support transit-first development – The RGS could consider, as a condition of subdivision approval, that transit service be operational from the time of first occupation. The expanded service provision could be partially paid for by the developer through either Development Cost Charges or Density Bonusing. This policy would have three primary effects. First, it would mean that development may not proceed without transit. Second, it would encourage developers to first consider locations already serviced by transit before non-serviced locations, reinforcing BC Transit’s current plan of improvements to existing transit systems prior to any new extensions. Finally, the provision of transit from the time of first occupation allows families and employees to get into the habit of taking transit from the moment they move in to a new subdivision.

- Work with BC Transit to significantly increase transit investment and transit service.
- Recent changes (2008) to the Local Government Act now allow local governments to use any “cash-in-lieu” for sustainable transportation infrastructure, which could include anything from sidewalks, paths, bus stop shelters, etc. The RGS should consider how this “cash-in-lieu” funding can contribute to region-wide sustainable infrastructure.

Encourage Transportation Demand Management (TDM) –

A general term for strategies that result in more efficient use of transportation resources, TDM emphasizes the movement of people and goods, rather than private motor vehicles, and gives priority to walking, cycling, ridesharing, public transit and telework. TDM strategies include: improving the transportation options available to consumers; providing incentives to change trip scheduling, route, mode or destination; reducing the distance needed to travel through more efficient land use, or transportation substitutes.

- The RGS could encourage and support the development of a Comox Valley TDM Plan

Evaluate Intelligent Transportation Systems – Given the recent surge in ridership on the Comox Valley Transit system, BC Transit and the CVRD have made the rectification of current scheduling problems a top priority. Intelligent Transportation System(ITS) are a potentially powerful way of rationalizing and revolutionizing rural regional transit systems. They use advanced computer technology such as GIS, GPS and transit modeling software to plan routes, gather data, and transmit information to bus drivers and passengers in real time. Case studies suggest it can be cost effective and contribute to increased ridership in rural areas.

- The RGS could consider encouraging the evaluation and/or implementation of ITS in public transit.

Advocate cycling lanes on all major regional roads

and arterials – Establishing a truly sustainable region-wide active transportation system that connects communities throughout the region could become a flagship policy of the Region. The regional greenway network now being developed through the CVRD’s Greenway Strategy initiative could also support improved bicycle connections to, through and between regional destinations.

- The RGS could consider encouraging the Ministry of Transportation and Infrastructure, the CVRD and municipalities to establish dedicated bike lanes on all major regional roads and arterials.
- The RGS could consider recognizing that immediate priorities for regional investment in bike routes and bicycle lanes are to be contained in the Comox Valley Cycling Plan.



CHAPTER 5

Agriculture & Food Security

Introduction

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Introduction

Protecting farmland and shoreline areas for food production helps to support stronger local economies and ensures that future generations have better access to affordable and nutritious food. If planned properly, protection of these areas can also contribute to the preservation of open space and the Valley's rural character, as well as help provide habitat for wildlife. Within the global context, the ability for a region to produce its own food is becoming increasingly important. Rising gas prices and the environmental impact of green house gasses from transportation are creating a greater awareness among consumers as to the origin of what they eat and how it is produced.

The purpose of this chapter is to provide an overview of agricultural land uses and aquaculture in the Comox Valley and to provide points of discussion for the RGS. The intent is not to provide a comprehensive analysis of these activities, but, rather, to understand how growth management can help to preserve and support agriculture and shellfish aquaculture as a strong component of the local economy and culture.

This review of agriculture and shellfish farming in the Comox Valley is set within a framework of food security that helps make connections between the preservation of natural resources for food production and related issues in the RGS, such as public health (e.g. nutrition, access and affordability of food), green house gas emissions (e.g. reducing 'food miles'), and conservation (e.g. ecological stewardship of farmlands).

Food security

The UN defines food security as: "a condition in which all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life". Food security also includes being able to make a living by growing and producing food in ways that protect and support the land, sea and the food producers, ensuring that there will be healthy food for our children's children.

Current situation

The microclimates and soil quality in the Comox Valley enable farmers to produce a range of agricultural products, including dairy, beef, oysters, grain and forage and small fruits.

Aquaculture

The province's aquaculture industry has shown continuous and rapid growth during the past two decades. In 1984, the industry's GDP was estimated at \$2.3 million and by 2005 it was contributing \$274 million to the GDP.¹

Baynes Sound comprises approximately 9,000 hectares (22,239 acres) of shoreline and aquatic areas with a variety of geophysical characteristics. The area has a range of rich and productive habitats, several of which have been incorporated into Wildlife Management Areas and reserves. It is one of the most important areas for shellfish aquaculture production in B.C.

Baynes Sound is provincially significant for its shellfish aquaculture and one of the most active shellfish harvesting grounds in BC. Over half of BC's shellfish production is grown in Baynes Sound. Out of the 956 shellfish industry jobs in BC, this area provides 406 of these jobs, uses 624 hectares (1,541 acres) of marine and land area and creates \$19.7 million in value. Most of the shellfish produced is exported outside of the Comox Valley.

Aquaculture

Aquaculture includes all establishments primarily engaged in farm-raising finfish, shellfish, or any other kind of aquatic animal or plant. These establishments use some form of intervention in the rearing process to enhance production, such as keeping animals in captivity, regular stocking and feeding, and protecting them from predators.

Agriculture

Agricultural Land Reserve

The Agricultural Land Reserve (ALR) (Figure 5.1) has played a key role in preserving farmland and supporting farming as a viable economic activity in the Comox Valley. Covering roughly 13% of the Comox Valley, the ALR area has remained relatively consistent at 23,059 hectares (56,955 acres) since its initial boundaries were drawn.

The Valley's farmlands are mainly located within the ALR boundaries, between the Beaufort Mountains and the coastal settlement areas around Merville and Black Creek. Most farming activities take place in the Regional District's three Electoral Areas. However, there are also small portions of ALR lands in the City of Courtenay and the Town of Comox.

The Agricultural Land Reserve

The Agricultural Land Reserve was established by the Province in 1973 to protect farmland from urbanization. It includes both private and public lands that may be farmed, forested or vacant, but where agriculture is recognized as the priority use. Administered by the Agricultural Land Commission (ALC) the ALR covers 4,759,249 hectares (11,898,122 acres) of BC's land area.

Agricultural Land Reserve

Legend

-  CVRD Boundary
-  Agricultural Land Reserve
-  Urban Settlement Area
-  Industrial Area
-  Rural Settlement Area
-  Agricultural Area
-  Resource Area
-  Park

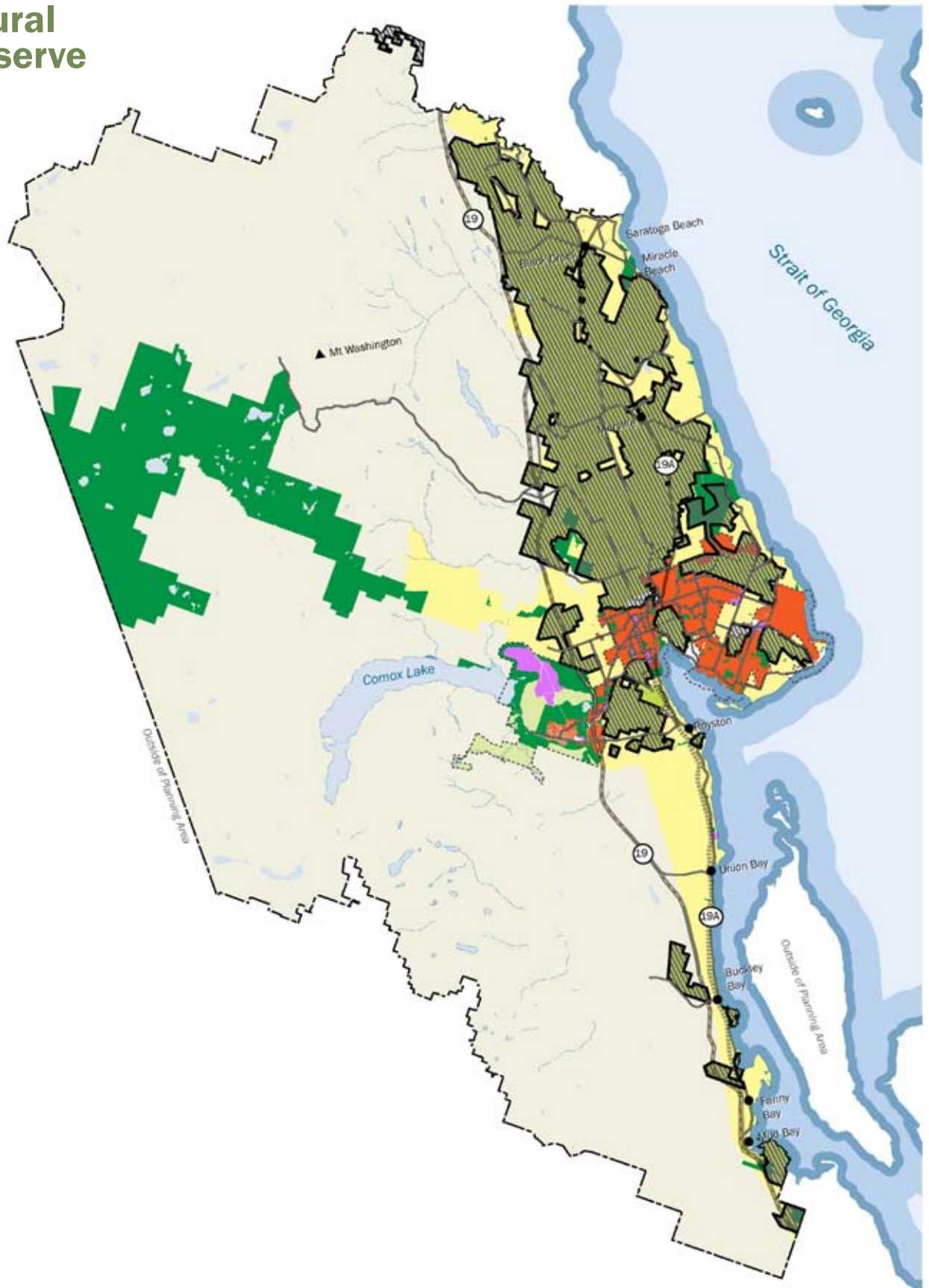


Figure 5.1

Farm Types and Parcel Sizes

Farms in the Comox Valley produce a wide range of agricultural crops due to the area's favourable microclimates and higher soil quality, as illustrated in Figure 5.2. There are over 60 different fruits, vegetables, nursery and field crops grown. Cattle, sheep and poultry comprise most of the annual production. Forage (livestock feed) is the most common crop as it requires the least amount of inputs. Small farm industries are also growing such as wineries and specialized organic farms.

Agriculture Activity (CSR D)

ALR Agricultural Activity	
Woodlot	20,725 acres
Forage	16,052 acres
Field Horticulture	3,109 acres
Livestock	1,927 acres
Dairy	1,348 acres
Equestrian Facilities	596 Acres
Greenhouses	93 acres
Shellfish (Oysters and Clams)	10 million lbs.

Figure 5.2

Source: Comox Valley Land Use Survey 2002

There are also a range of parcel sizes scattered throughout the Comox Valley, including small parcel sizes of 2 hectares (5 acres). The average farm size in the Comox Valley tends to be smaller than averages across Canada. In the Comox Valley the average farm size is 30.7 hectares (76 acres)² compared with the BC average of 143 hectares (353 acres).³ Protecting larger parcel sizes of 8 hectares (20 acres) and more, is a priority for the ALC. Typically, parcels of this size are more likely to be used for agriculture, while parcels that are less than 8 hectares (20 acres) tend to be used for rural residential or recreational opportunities.⁴ This is consistent with other jurisdictions that have found that allowing small parcel sizes has been ineffective in encouraging agricultural production and tend to result in the use of agricultural lands for residential purposes. Even organic vegetable farmers tend toward a larger land base in order to manage their rotations. Given the abundance of smaller parcel sizes and the historical correlation between larger parcels and active agricultural production, it is unlikely that the ALC will entertain subdivision land requests at this time.⁵

Size of Farmed Parcels, Land Use Inventory in the Comox Valley

Hectares	Total Number of Parcels	Total Hectares	Number of Parcels Farmed	% of Parcels Farmed in size category	Total Area of Farmed Parcels (hectares)	% of Area farmed by size category
<2 (5 acres)	398	464	71	18%	93	20%
2-4 (5-10 acres)	321	885	92	29%	268	30%
4-8 (10- 20 acres)	233	1372	121	52%	725	53%
8-16 (20- 40 acres)	248	2813	156	63%	1805	64%
>16 (40 acres)	380	18817	293	77%	15,270	83%
Total	1580	23,851	735	47%	18,161	76%

Figure 5.3

Source: 2007, Ministry of Agriculture and Land, Land Use Inventory

Farm Types and Parcel Sizes

The average age of a farmer in The Comox Valley is 53, slightly older than the Canadian average of 50⁵. Continuing the trade of farming is an issue across Canada, as there are few young people training to replace existing farmers. One of the barriers to entry for younger and potential farmers is the cost of farm operations. Farm operation costs include purchasing land, equipment and initial start-up costs. The general cost of land is summarized in Figure 5.⁷ Figure 5.4 also illustrates that purchasing smaller parcel sizes is not necessarily more affordable because the costs per hectare tends to decrease as farm size increases. Generally, the range is \$10,000 per acre for the large acreages, and up to \$84,802 for the smaller properties.⁸ The average sale value of properties less than 4 hectares is almost 8 times that of properties larger than 16 hectares. This may be a result of smaller parcels having a larger residential footprint or other improvements relative to the total size of the parcel. It may also be related to the high demand for rural residential properties.⁹

Average Sale Value per Hectare in the Comox Valley

Farm size ha/acre	Price (per ha)	Number of farms
2 to <4 (5 to < 10)	\$84,802	26
4 to <8 (10 to <20)	\$45,160	22
8 to <16 (20 to <40)	\$31,437	24
>=16 (>=40)	\$10,861	42

Figure 5.4

Source: Ministry of Agriculture, 2007¹⁰

To give a sense of the income gap between farmers and the average resident in the Comox Valley, the average household income is \$59,136¹¹, whereas over half of the farms (251) earn less than \$10,000 annually. Overall, farmers in the Comox Valley continue to struggle and tend to rely on off-farm incomes and value-added agricultural services such as agri-tourism.

Farming infrastructure

Historically the Comox valley has supported a vibrant farming community that continues to this day. Additionally the ALR protects much of the quality soils and a favourable climate of warm/dry summers and short, mild winters create good growing conditions.

Close proximity to growing urban populations encourages a diversity of farm products. The Comox Valley Farmers market has helped support this trend. It now operates year round with approx 20 vendors in the winter months and over 80 vendors in the summer. Vancouver Island also has several independent retail establishments that support local products.

There are also two dairy processing plants, the Dairyland plant is owned by Saputo Inc. that processes fluid milk and Natural Pastures Cheese which uses local milk in award winning cheese production.

There are two shellfish processing plants Fanny Bay Oysters and Mac's Oysters Ltd. New regulations that require all meat processing plants to be licensed was introduced in 2007. Gunter Bros. Meats a red meat plant (beef, pork lamb) and Sunshine Aces a poultry processing plant are both certified under the new regulations.

In terms of produce transport, the Comox Valley is well-served by the Island Highway that runs north-south along the coast of Vancouver Island, the Comox Valley airport with flights to Vancouver and Calgary and the opportunity for barge facilities in the future.

Farmers are supplied by specialized seed and fertilizer companies in Vancouver and Duncan. There are several farm and feed stores that cater to the smaller scale producer. North Island tractor is located in Courtenay and many of the local business carry agricultural parts to support the farming community.

Local farmers are well supported by farm organizations that provide education, information and social connections to other farmers. The Comox Valley Farmers Institute has been in operation for over 100 years. It meets once a month from October until May. It has an equipment coop open to all members and supports the delivery of the waterfowl compensation program and provides a connection between the farm community and elected officials by conducting farm tours.

The Comox Valley Farmer Market Association has been in operation since 1992. It has grown steadily from its 12 original members to over 80. The Comox Valley Farmers' Market Association, Farmers' Institute and Economic Development Society are considering a permanent farmers market and a possible agriculture and conservation centre. Locations for the facility are yet to be determined but there is discussion of the Comox Bay Farm site and K'omoks Band land on the Puntledge River. Additional features could include a distribution centre within the facility and utilities for farmers for value-added products.¹²

The BC Ministry of Agriculture and lands has had an office in the Comox Valley since the early 1900's. This office continues to provide information, advice and support to the farming communities on the North Island.

In terms of servicing, farmers currently rely on well water for their crops and metred water service for drinking water. Irrigated farming commodities are highly valued as they tend to take up less production area, but bring in most of the farm receipts. To increase productivity of existing and future farmland, there is a distinct need to plan for water servicing in agricultural areas and balance this with the water resources allocated for urban areas. The water strategy could focus on conservation methods along with extending (untreated) water services to agricultural areas for irrigation.



Policies and Plans

Agricultural activities in the Comox Valley are guided by a series of policies and plans. Key policies and plans are summarized in Figure 6 and further information on relevant policies in the Rural Comox Valley OCP are discussed below. The main purpose of these policies and plans is to ensure that land is protected for agricultural activities and that the land is used in an ecologically sound manner.



Policies, Plans and Agencies

Policy/Plan	Agency	Jurisdiction/Area	Mandate
Agricultural Land Commission Act	Provincial Agricultural Land Commission	Agricultural Land Reserve	Sets out permitted uses in the ALR along with application criteria and procedure for subdivision, exclusion and inclusion. Agriculture is recognized as the priority use. Farming is encouraged and non-agricultural uses are controlled.
Farm Practices Protection Act	BC Ministry of Agriculture and Lands	Areas zoned for Agriculture	Provides descriptions of normal farm practices and provides a method to resolve concerns, complaints identified by the community. It also has a formal mediation process through the Farm Industry review Board.
Rural Comox Valley OCP (1998)	Regional District	Electoral Areas	Retain rural character of Comox Valley yet accommodate continued agricultural and forestry opportunities, expanded recreational opportunities, residential uses and limited commercial and industrial activities. The land use patterns for this area are meant to minimize urban sprawl.
Comox Valley Agricultural Plan	Regional District	Comox Valley	Further the development of socially, culturally, environmentally and economically sustainable farming.

Figure 5.5

Rural Comox Valley OCP, Bylaw 1998

The Plan's policies and objectives are to retain the rural character of the Comox Valley yet accommodate continued agricultural and forestry opportunities, expanded recreational opportunities, residential uses and limited commercial and industrial activities and minimize urban sprawl. Related to agricultural land use, the OCP sets out the following policies:

Parcel size, boundaries and servicing

- Retain large parcels of land for agricultural use both through discouraging subdivision and encouraging consolidation of smaller parcels.
- Reinforce the ALR boundary and uses by conforming to the permitted uses set out by the Agricultural Land Commission Act.¹³
- Support agricultural production through appropriate servicing of water by encouraging methods of water collection, storage, distribution and re-use to meet irrigation needs of the agricultural industry.

Buffering

- Mitigate negative impacts between non-compatible agricultural and residential land uses through appropriate buffering. Buffering is required as per ALC Landscape Buffer Specifications which include natural vegetated or landscaped buffer areas and/or fencing along property lines.
- Development Permit Areas are set out to buffer agricultural lands. They apply to any parcel of land that is 2 hectares (5 acres) or smaller, within 100m of the ALR. The purpose is to reduce conflicting land uses, create a visual transition and to create guidelines for landscaping and drainage.

Aquaculture and Fisheries

- Area 'A' Electoral Area Plan recognizes the historical importance of the shellfish aquaculture industry in Area 'A' and as such protects existing uses of the marine environment for shellfish aquaculture from future development and zoning changes.
- The Town of Comox OCP encourages shellfish aquaculture in the marine areas but there are also restrictions on visibility and noise given the shared uses with the marina and recreation.

Ecological Stewardship

- Encourage farmers to become environmental stewards of the agricultural lands.
- Through the land use designation Coastal Area, fisheries and aquaculture related habitats and resources shall be protected, and identifies inter-organization cooperation to protect Baynes Sound shellfish resources.
- Protection of streams for fish access and the retention of natural open channels for small streams as surrounding areas are developed. Support protection of riparian areas to help to create healthy aquatic zones. Working landscapes were exempt from the setback distances prescribed in the riparian DPA's in the zoning by-law. Federal, provincial and farm organizations are working on a provincial standard. To date, building setbacks from water-bodies are almost complete but it will take much longer for riparian setbacks given the diversity of situations in the province.
- Any watershed management planning is supposed to include policies to enhance the health of the local shellfish industry and emphasize the need to protect this unique marine habitat shellfish.

Comox, Courtenay and Cumberland OCPs

In the Town of Comox and the City Courtenay recent boundary extensions have brought ALR lands within the borders of the city. Both municipalities also border ALR lands. As such their OCPs set out policies specific to agricultural lands that include:

- Appropriate landscaping and buffer treatments in accordance with regulations and guidelines set out by the ALC.
- Support of the ALR guidelines on agricultural land protection and promotion.
- Support of ongoing support of farming activity.

In the City Of Courtenay, these ALR lands are included in the recently created South Courtenay Local Area Plan and part of the Raven Ridge proposed development. In the Town of Comox, there is a small portion of ALR lands south of Knight Road. There are no ALR lands or associated policies for agriculture in the OCP for the Village of Cumberland.

Local Committees & Organizations

At the local level, farmers are represented and informed through three main non-profits and associations. These bodies help to disseminate policy information, advocate on farmers behalf and promote best practices in the industry. These are also two Provincial organizations representing farmers

Agricultural Advisory Committee (Local Advisory)

The Agricultural Advisory Committee (AAC) provides a formal and ongoing venue for the farming community to advise local councils and regional boards and assume a central role in designing plans, policies and by-laws affecting farming and agricultural land. The AAC is appointed by the CVRD, with members appointed by the Farmers' Institute (see below). The body provides comment on local and regional plans and applications that will impact the agricultural community. There is an 11-person membership with people from different areas of the Valley.

Comox Valley Farmer's Institute (Local non-profit organization)

The Comox Valley Farmers Institute is an organization that provides producers and farmers in the region an opportunity to discuss issues and opportunities related to agriculture. There are close to 100 members in the organization who interact with local government through the AAC.

Comox Valley Farmers Market Association (Local non-profit)

The Comox Valley Farmers Market Association is a non-profit society that operates the farmers market. There are over 80 members that use the market to sell their farm products.

BC Agriculture Council (Provincial Association)

The Council fosters cooperation and a collective response to matters affecting the future of agriculture in the province and facilitates programs and service delivery for a number of programs that benefit the industry. Its mission is to provide leadership and to take initiative in representing, promoting and advocating the collective interests of all agricultural producers in the Province of BC.

BC Shellfish Growers Association (Province-wide non-profit association)

The BC Shellfish Growers Association (BCSGA) is the industry association representing the shellfish farmers and industry partners in BC. It is a non-profit that represents the majority of shellfish growers in BC in addition to suppliers and service providers to the industry. Its mission is to advance the sustainable growth and prosperity of the BC shellfish industry in a global economy by providing leadership and advocacy to members and stakeholders while maintaining the integrity of the marine environment. The association also produces reports on the state of the industry.

Trends and Issues

Based on the information contained in this chapter, a number of trends and issues in Comox Valley begin to emerge and are discussed below.

The ALR has helped to preserve farmland in the Comox Valley.

With few exceptions, agricultural uses in the Comox Valley are within the ALR. The ALR makes up 13% of the land in the Comox Valley at 23,059 hectares (56,955 acres). Within Electoral Area C – Puntledge-Black Creek, the ALR lands are contiguous. However, they become fragmented in Electoral Area B – Lazo North, especially in and around the urban areas of the City of Courtenay and the Town of Comox. With settlement areas intensifying along the borders of the Regional District, these areas are likely to see the greatest pressure from urbanization.

Competition for water sources

In order to produce a healthy diet for British Columbians, farmers need 2.15 million hectares of food producing land of which 10% (215,000 hectares) needs to be irrigated.¹⁴ Despite having adequate land resources, according to the 2001 Census of Agriculture data less than 5% of the farmland in the Comox Valley has access to irrigation water. Access to irrigation water is already a limiting factor in increasing production for many farmers in the Comox Valley. Limited infrastructure in the rural areas plus additional demands on the regional district water supply system- from population growth and climate change- will likely make water access an even bigger challenge. The Regional Water Strategy for the Comox Valley will be looking at potential means of providing more irrigated water to farms.

Agriculture has multiplier effects in the local economy

Agriculture has a significant impact on the local economy. For every direct job in agriculture, two additional jobs are created in the local economy to support services to the industry, and in the processing and marketing of agricultural products. For every dollar generated in agriculture, an additional \$2 dollars is generated in the local economy.¹⁵ In early 2000, the shellfish industry was positioned as a short-term solution to the economic impact of the decline of traditional coastal economies of fishing, forestry, and mining.

A recent study by Statistics Canada on revenue multipliers found that agriculture had the highest revenue multiplier of any industry in Canada, which means that growth in agriculture will have a higher positive ripple effect on other industries than growth in any other sector. Recognizing this, the Comox Economic Development Society is promoting agriculture as a key driver for the Region's economy.

Growing ecological stewardship

Farming can impose environmental risks to the land. These risks include: damage to riparian areas; stream pollution from chemical run off and soil erosion; degraded air quality through land clearing; and, strain and competition over water resources. The Comox Valley Agricultural Plan identifies the mitigation of environmental risks as a key objective.

In recognition that agricultural lands provide an important function as natural linkages and areas with sensitive ecosystems, the Farmers' Institute is helping to raise awareness for directing stewardship practices that support farming. The Farmers' Institute has also flagged the need to develop compensation mechanisms for farmers with land that has sensitive ecosystem areas within it. This is particularly important for farmland that has a substantial number of natural features such as streams, rivers and wetlands. Depending on the size of these features, farmers may have problems accessing parts of their lands or farming in general. The Institute has proposed a tax assessment that would help set aside these lands for ecological reasons without penalizing the farmer.¹⁶

Environmental Farm Plan (EFP)

The BC Environmental Farm Plan (EFP) is a joint federal and provincial funding program that works with farmers to conduct an environmental audit of their agricultural operation and identify goals to reduce the environmental impacts. The EFP program funds up to 50% of costs to improve habitat and to mitigate environmental impacts. The rest is paid for by the farmer. Once completed, the farm receives Environmental Farm designation and can place a sign to that effect on the farm. This is a voluntary program that was initially delivered in the Comox Valley by the Farmers' Institute.



Research and development

The Centre for Shellfish Research and the associated Deep Bay Field Station is planned for Deep Bay, just outside of the Comox Valley, in the Regional District of Nanaimo. In partnership with Vancouver Island University and the BC Shellfish Growers Association, the Centre is meant to cluster social, economic, environmental and scientific programming in one facility to create a centre of excellence and innovation for shellfish growing technology and research. Although this is outside of the Comox Valley, the station is likely to have a positive impact on the local shellfish economy in terms of attracting and retaining younger residents, developing green technology for the industry, and helping to promote the importance of shellfish aquaculture to the region.¹⁷ Construction of the station began on May 22, 2009.

Comox Valley's Farmer's Market

The Comox Valley Farmer's market has been a great success, both in terms of providing residents with access to locally grown produce and in giving local farmers a venue to sell their goods. Unlike larger grocery store chains, farmers markets enable the seller to retain a larger profit¹⁸ Currently, the market is housed in the Native Sons Hall, during the winter and outside at Headquarters Road during the summer. Due to an increase in vendors (there are now over 100) and upcoming renovations, the Comox Valley Farmers' Market Association, Farmers' Institute and Economic Development Society are considering a new permanent location. A feasibility study was recently carried out to consider the possibility of a permanent farmers market and a possible agriculture and conservation centre. Locations for the facility are yet to be determined, but there is discussion of the Comox Bay Farm site and K'omoks Band land on the Puntledge River. Additional features could include a distribution centre within the facility and processing equipment for farmers to create value-added products.¹⁹

Land base for a more food secure region

There is great potential in the Comox Valley to create a more food secure region. According to the BC Food Self Reliance report, 0.5 hectares (1.25 acres) of farmland is needed to provide enough food for one person per year.²⁰ In the Comox Valley there is a population of approximately 63,698 people. Using .5 hectares (1.25 acres) per person, the Comox Valley would require 31,849 hectares (79,622 acres) of farmland for the population to subsist for one year. In the ALR lands alone, there is close to this amount: 23, 059 hectares (56,955 acres), only 13% of the Comox Valley land area. When considered with agricultural lands outside of the ALR and urban agricultural opportunities, this is an achievable amount. It should be noted however, that land alone does not ensure agricultural activity. Ability to irrigate the land is the most important issue in the Comox Valley. The ability to irrigate 25% of the land should be added to the above scenario.

Adding additional agricultural activities in the urban areas increases the food security of the region. The Lush Valley Food Action Society recently invited the CVRD to sign on to the North

Regional Districts Regional Food Charter toward developing a coordinated regional food security policy on northern Vancouver Island. The Comox Valley Sustainability Strategy will also set targets and actions for creating a more food secure region.

Integrating agriculture into all land-use zones

Integrating agriculture into all land-use zones has spurred a number of design, planning and business ideas. One example is the Agricultural Transect, as illustrated in Figure 7, put forward for the Southlands development project in Tsawwassen, BC.²¹ Taken from the Southlands Design Charrette, it illustrates the agricultural transect, which moves from the Natural Zone on the left toward the Urban Core Zone on the far right. The main premise is that agricultural activity is integrated into each of these zones in varying degrees of intensity. In the Natural Zone, agriculture is comprised mainly of forgeable areas and large farms on large land parcels, as one moves toward the more urban areas, land parcels become smaller and farming more intensive. In the urban core areas agricultural activities occur in much smaller spaces such as container gardening on balconies and in community garden plots.

Agricultural Transect



Figure 5.6

Points for Discussion

Planning for agriculture of different scales in the Comox Valley is becoming a priority. While the ALR protects a considerable amount of land in the Comox Valley for food production, there are considerable opportunities to intensify and make better use of existing agricultural lands. There is enough ALR land to create a more food secure region, but at the moment only one third of this land is being farmed. There is also only a small portion of farm products being consumed with the region. The RGS can help to create a more food secure and economically viable environment for food production through the protection and reinforcement of ALR lands, encouraging and supporting urban agriculture in private and public spaces, and helping promote greater awareness around food security. Supporting water supply discussions that include agriculture will also help local agriculture and better address such pressing issues as irrigation water supply and regional conservation. The following is a list of policy ideas to be considered in the RGS.

Protect land for future farming

The ALR has proven to be an important means of preserving agricultural land in the Comox Valley. The RGS should reinforce the existing ALR boundary to both protect agricultural lands and manage the expansion of settlement areas. Some policies to protect land for future farming to be considered for the RGS include:

- Land zoned agricultural should not be subject to rezoning to allow non-farm uses except in limited, defined circumstances.
- Where soil quality is poor, alternative farming activities should be considered such as greenhouse production. Wherever possible contiguous areas of agricultural land should be preserved and severance by recreation, parks, and transportation and utility corridors avoided.
- Mitigate negative impacts between competing land uses with strong buffers on the non-agricultural side.
- Create strong edges through available legislation (Development Permit Areas, Farm Bylaws and Land Title Act)
- Maintain contiguous, large parcels of land for active farming through reinforcing of ALR policies to not subdivide land.

Look at options for regional water system to sustain agricultural resource needs

Access to water irrigation and improved drainage are key issues for future viability and expansion of agricultural activities in the Comox Valley. At the regional level, watershed planning was identified as a strategy to help to coordinate various partners in water management. Some policies that could be considered for the RGS include:

- Identify and protect major watersheds in the Comox Valley (e.g. Black Creek, Tsolum River, Little River).
- For each of these watersheds, develop a watershed management plan that would involve the community and address competing demands between agriculture, fishery and other water users for water use quality, wetlands and habitat and identify and protect critical recharge areas.

Develop agriculture as a key economic driver

Supporting value-added practices will become increasingly important in order to support the existing agricultural industry and to create incentives for young farmers entering the industry. Some policies that could be considered for the RGS include:

- Allow for cooperatives and creative land tenures, or tax incentives for new farmers.
- Encourage the development of support infrastructure such as research and development and shared processing facilities.
- Encourage the development of a permanent farmer's market in the Comox Valley.

Stronger Edge Planning With More Urbanization

As more people move into the Comox Valley, pressures on agricultural land will increase as more residential uses share boundaries with working farms. Mitigating or avoiding these land use conflicts will become increasingly important. In addition to creating stronger settlement boundaries and buffers, the relationship between settlement areas along the coast and agricultural areas also needs to be considered. Agricultural operations at the urban and rural edge tend to be more vulnerable to impacts from non-farm neighbours (e.g., littering, crop theft, noise and odour complaints, trespassing, etc.). Generally, this interface has been partially addressed on a more ad-hoc basis through buffers such as roads, vegetation and swales. Some additional policies that could be considered for the RGS include:

- Develop consistent and coordinated region-wide buffers guidelines and standards to buffer and protect agricultural lands from other land uses.
- Use available legislation to create strong boundaries.
- Develop an agricultural land interface that considers how best to buffer agricultural lands from other types of land uses.
- Evaluate mediation opportunities to address conflicts

Encourage ecological stewardship in farming

Land stewardship can be helped by clear mapping and designation of buffers around streams to protect water quality and fish habitat. In particular, streams running through farmlands are an opportunity for stewardship initiatives. Some policies that could be considered for the RGS include:

- For agricultural lands, develop appropriate riparian protection policies and regulations that conform to provincial standards.

Raising awareness of the regional importance of local agriculture

Raising awareness among the general population as to the importance of healthy food and the local economy can be generated through a number of means. Food production in the more urban areas should be balanced with local farm production in rural areas. Given the close proximity to larger-scale agriculture, urban food production should consider potential negative impacts on rural areas such as disease from fruit trees. Some policies that could be considered for the RGS include:

- Consider the potential for agricultural uses on vacant/underused lands within urban areas.
- Support the incorporation of urban agricultural opportunities into new buildings and community and civic spaces (such as schools and new residential dwellings).
- Create urban agriculture guidelines that require new developments to incorporate food growing landscapes in new developments and public realm open spaces.
- Develop a coordinated regional food security strategy that would include a review of existing policies and agricultural opportunities such as urban gardening, community orchards and programs such as community supported agriculture.
- Identify potential sites for community gardens and orchards within local government OCP reviews.

Allocate area for agricultural resource centre

Creating a permanent agricultural resource centre would be an excellent opportunity to develop best practices for farming in the Comox Valley and to have a permanent venue for a farmer's market. The allocated site could be a combined research centre, farmers market and resource centre, located in the City of Courtenay or the Town of Comox to provide easy access for local farmers and consumers. This could also be an opportunity to create a demonstration site within the property to further integrate urban and rural agricultural practices. Links could be made with the existing compost demonstration and community garden site on the Exhibition grounds.

- Consider an agricultural resource centre as part of the overall economic development strategy.
- Provide direction in relevant OCP to designate land for an agricultural resource centre.



CHAPTER 6

Parks & Natural Areas

Introduction – Mountain to Sea

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Introduction

Mountain to Sea

Comox Valley's natural beauty derives from the stunning mix of glacier, mountain and sea and almost everything in between, including globally rare temperate rainforest, provincially rare Coastal Douglas-Fir, alpine meadows and lowland meadows, wetland, stream and river networks, estuaries, sand dunes, beaches, rocky shores, and marine ecosystems. These varied ecosystems provide important habitat for a vast array of wildlife, along with growing numbers of people. A challenging role for the RGS will be to manage population growth and activities in a way that enables both human and non-human life to flourish. Ecologically, the Comox Valley is one of the most diverse regions in Canada and one of the most threatened by development pressure. Almost all forested ecosystems in the Valley are provincially red- or blue-listed, meaning that they are endangered or threatened, and qualify for Environmentally Sensitive Area (ESA) classification under the Sensitive Ecosystem Inventory (SEI).¹

In just one decade between 1991 and 2002, 42% of the Comox Valley's rare and threatened sensitive ecosystems lands were either lost, fragmented or reduced.² In recognition of the above, and based on the preliminary findings of the work of a local land trust organization³, the CVRD Board embraced the concept of regional conservation at a July 29, 2008 meeting. Building on this initiative, this chapter explores the concept of regional conservation and contemplates the role of the RGS in realizing a regional conservation strategy. The Valley's ecosystems are introduced based on biogeoclimatic zonation and Sensitive Ecosystem Inventory, followed by a description of what a regional conservation strategy might entail, a summary of current conservation initiatives in the valley, the challenges to realizing such a strategy, and ideas to consider in formulating the RGS.

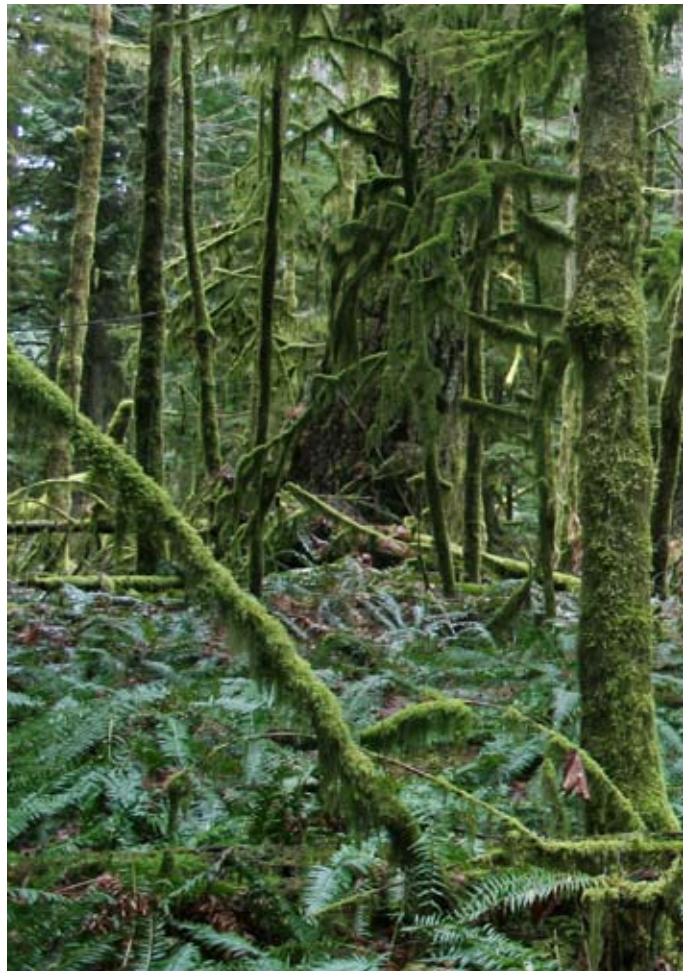
Temperate Rainforest

Approximately half of all temperate rainforests have been cleared by human activity. Ninety-five per cent have been cut in California, Oregon and Washington, positioning British Columbia's coast – including Vancouver Island and pockets of Comox Valley - with the largest remaining cover of temperate rainforest left in the world (Inforain 2007).

Temperate rainforest originally covered just 0.02% of land on Earth and were found formerly in the Americas, Asia and Europe but today are found only in coastal British Columbia, southern Alaska, and Chile, and a few smaller areas remain in Australia and New Zealand (Suzuki 2007).

Rainforests contain the highest species diversity on the planet. Biologists today are scrambling to “discover” rainforest species before human activity causes their extinction. New species could still be discovered in Vancouver Island's temperate rainforest according to the work of biologists at the University of Victoria.

(For more information on Vancouver Island studies, visit <http://web.uvic.ca/~canopy/winchest.html>)



Comox Valley's Ecosystems

Biogeoclimatic Zones

The BC Ministry of Forests has developed an ecological classification commonly referred to as biogeoclimatic zonation. These zones consider the diverse landscapes, strong regional climatic gradients, and complex local site variations found in the Province. Of the 14 biogeoclimatic zones in BC, four are found within the RGS planning area (Figure 6.1):

The Alpine Tundra (AT) zone, extends down the centre of the Vancouver Island (known as the Vancouver Island Range Mountains). The AT zone also includes the coastal mountain ranges of the mainland. This high elevation zone tends to be well represented in the provincial park system since, in the past, provincial parks were set up largely to protect recreational features favoured by hikers and mountaineers. It can be found in Strathcona Provincial Park and Mount Washington

The Mountain Hemlock (MH) zone, surrounds the edges of the Alpine Tundra zone. This zone also tends to be well represented in the Provincial park system, due at least partially to the lesser timber value. Comox Valley residents experience the MH zone in Strathcona Provincial Park and Mt Washington ski resort.

The Coastal Western Hemlock (CWH) zone, extends across the majority of Vancouver Island and the length of BC's coast. This zone occurs at low to middle elevations, stretching north into southern Alaska and south into Washington and Oregon states; this zone is also where the majority of the human population resides. It is on average the rainiest zone in BC, and holds the highest timber value. The CWH zone is often referred to as temperate rainforest, which are globally very rare.

The Coastal Douglas-Fir (CDF) zone, is restricted to the southeastern coast of Vancouver Island, the Gulf Islands, and a small fragment of the southwestern portion of the mainland. In BC, habitat for Garry oak trees and associated species occurs only in the CDF zone, except for rare instances where individual Garry oak trees might be found along rocky coastlines in the Coastal Western Hemlock zone. Habitat loss due to human habitation and activity has increased the rarity of the CDF zone and poses a major threat to it. The CDF zone in the Valley begins near Deep Bay, and extends south beyond the Comox Valley.

Subzones

Biogeoclimatic zones may be further divided into subzones for a greater understanding of the variety of habitats and species within them. The subzone classification is an important distinction, because while the overarching zone may be widespread in range, certain subzones may be highly restricted and therefore require special land use considerations.

The four Coastal Western Hemlock subzones in Comox Valley, as illustrated in Figure 6.1: Biogeoclimatic Subzones of Comox Valley, are:

Eastern Very Dry Maritime,
a rare subzone highly restricted in range

Western Very Dry Maritime,
a rare subzone highly restricted in range

Submontane Moist Maritime,
part of the globally rare temperate rainforest

Montane Moist Maritime,
part of the globally rare temperate rainforest

Biogeoclimatic Subzone Map of Vancouver Island

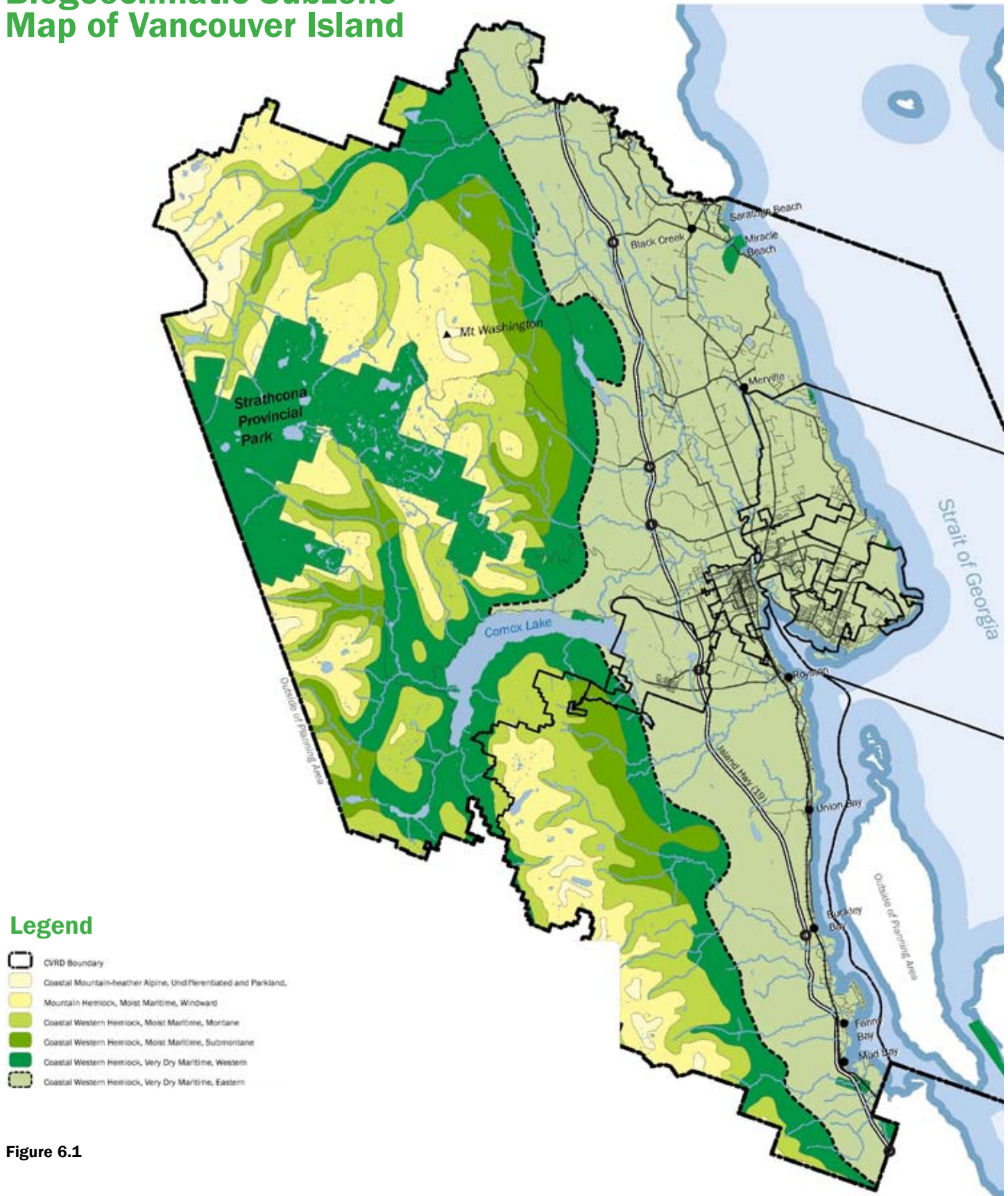


Figure 6.1

CWH eastern and western very dry maritime subzones in Comox Valley

These drier forests have a greater proportion of arbutus and Douglas-fir trees, and are normally characterized by their adjacency to the even drier, Coastal Douglas Fir zone. These driest subzones are the most endangered CWH subzones.

The relatively small range of these subzones combined with their attractiveness for human settlement and activity pose significant threats.

Arbutus trees are endemic to the west coast of Canada and therefore hold significant conservation value.

Arbutus and coastal Douglas-fir trees have adapted to the relative dryness of these subzones. Trees like these which can withstand lesser rainfall and increasing temperatures may hold significant scientific value in the face of global warming.

Garry Oak Meadows Ecosystems

Garry Oak ecosystems in BC occur in the rare Coastal Douglas Fir zone.

Less than 5% of the Garry Oak habitat remains in near-natural condition. At least 116 species of plants, mammals, reptiles, birds, butterflies, dragonflies and insects are at risk of extinction in Garry oak and associated ecosystems. Wildfires are beneficial to Garry Oak ecosystems because they thin out woody species and maintain an open canopy, allowing the right amount of sunlight for Garry Oaks and preventing conifer trees like Douglas fir and Hemlock from growing. In the past, wildfire from lightning and fires set by First Peoples to promote production of camas plants, an important food source, prevented shrubs and fire-sensitive trees from becoming established.

Present day fire suppression enables species such as Douglas-fir, which grow tall, to shade out the shorter oak stands. Many Garry Oak stands ultimately convert to conifer forests, whose shrubs crowd out meadow wildflowers and other species.

Sensitive Ecosystems

Comox Valley is home to an extraordinary variety of sensitive ecosystems. A partial list of sensitive ecosystems in the Valley includes coastal bluffs, sand dunes, spits and cliffs, riparian areas, wetlands, woodlands, mature forest and older second growth forest.

The federal Canadian Wildlife Service in cooperation with the BC Ministry of Environment⁴ carried out a Sensitive Ecosystem Inventory (SEI) mapping project for East Vancouver Island and the Gulf Islands. The SEI mapping that covers the Comox Valley was carried out in the early 1990s and redone in 2002 in order to identify lost and disappearing sensitive ecosystems. The SEI data shows that⁵:

42% (approximately 2,7000 hectares) of the Valley's rare and threatened sensitive ecosystems lands were either lost, fragmented or reduced between 1991 and 2002.

97% (approximately 9,300 hectares) of the Valley's highly valuable human-modified ecosystems (second growth forests and seasonally flooded agricultural fields) have been fragmented and reduced between 1991 and 2002.

A 2004 SEI report concludes:⁶

The disturbing results of the SEI mapping are clearly a wake-up call for all land use decision makers, sending a strong message that a more strategic landscape approach to land use planning rather than an ad hoc, site-specific approach must be adopted in order to ensure the protection of the region's biological diversity.

Gaps in Regional Conservation Data

SEI information is derived from aerial photography and supported by selective field checking of the data. The SEI mapping for Comox Valley, however, has not been supported by field checking and therefore land areas that are less than half a hectare in size were most likely missed by the inventory. Wetted forests, ephemeral wetlands, the riparian areas of small streams, and Garry Oak and associated ecosystems are examples of highly important areas that would have been missed by the SEI.

Additionally, little easily available data exists for marine life or ecosystems. For instance, marine mammals, like sea lions, require protected haul-out areas, salmon spawning areas can be destroyed by incompatible land uses, and many bird species rely on intertidal zones for feeding. Comox Valley is recognized by Bird Studies Canada, Nature Canada and Birdlife International as an 'Important Bird Area of Canada'. The Courtenay Estuary and other locations in the Comox Valley provide essential habitat for many species of migratory birds.⁷

A Comox Valley Conservation Strategy

A Comox Valley conservation strategy, simply defined, would be a regional approach to protecting the diversity and richness of the Valley's species and ecosystems – the Valley's biodiversity. Conservation biology is the scientific approach to conserving biodiversity, and its fundamental principles offer considerable guidance in crafting a regional conservation strategy for the Comox Valley.

Conservation biology is concerned with two fundamental principles: (1) protecting the genetic diversity within a species (species diversity); and (2) protecting fully functioning ecosystems (ecosystem diversity). These principles of conservation biology recognize that fragmented ecosystems may lose the ability to carry out natural ecosystem processes (e.g., carbon, nitrogen and water cycles), and may provide habitat that is too small to support species over the long term.

Conservation biology therefore promotes an approach to conservation that creates a system of linked protected areas. Practically speaking, this is accomplished by protecting the functioning of multiple ecosystems, and linking them to each other with wildlife corridors. Wildlife corridors are not meant to be “no touch” zones; however, in specific instances some of the habitat refuges that they link together might be designated as no-touch areas.

Realizing a regional conservation strategy would require the collaboration of multiple stakeholders, including provincial, regional and municipal governments, K'omoks First Nation, private landowners, and non-governmental organizations like the local Comox Valley Land Trust and Project Watershed.

A vision for regional conservation could also include opportunities for valley residents to recreate in nature, including parks and trails (or recreation greenways). As noted in the Public Health chapter, there are tremendous health benefits to outdoor recreation, including a decrease in obesity levels and associated disease and increased mental health. Additionally, protected forested areas act as a carbon sink by absorbing greenhouse gases.

Current Conservation Initiatives

Work towards a regional conservation strategy is already well underway. This section summarizes some of the regional conservation initiatives in the Comox Valley.

Nature Without Borders Regional Conservation Strategy

The Comox Valley Land Trust (CV Land Trust), a local conservation organization, has completed the first phase of a regional conservation framework for the Valley. This work is published in the report, “Nature without Borders: The Comox Valley Land Trust Regional Conservation Strategy”. The report was developed, in part, to assist the many stakeholders – conservancies and other non-government agencies, local and senior levels of government, and individuals – to take on the challenging task of regional conservation planning and implementation in the Comox Valley. The report identified and mapped the Comox Valley’s natural areas and ecological features, as illustrated on Figure 6.2.

The Priority Ecological Areas for Conservation include:

- **Riparian areas:** watercourses, wetlands and lakes with a 30 meter buffer. Approximately fifty-percent of small streams in low elevation watersheds have not been mapped yet.
- **Sensitive ecosystems** as defined by the Province’s SEI, with a 30 metre buffer. The majority of these are located largely in the rare CWH eastern and western subzones, as well as at least five areas which are in the rare Coastal Douglas-Fir zone. These areas are valuable due to the rarity of species and plants within them.
- **Browns and Tsable River Watersheds:** two critical, undeveloped watersheds, the Browns (north of Comox Lake) and the Tsable (south of Comox Lake). These are largely in the CWH moist maritime subzones, or temperate rainforest, and they provide linkages for wildlife from the east coast of Vancouver Island to the west coast, via Strathcona Park.

- **Upland wildlife corridors** which create linkages for wildlife and plants to move between sensitive ecosystems and existing parks and protected areas. These wildlife corridors were originally identified through the work of biology consultants, including field work, surveys and an advisory of biological and wildlife experts.⁸ The map includes a 500 meter buffer on either side of the corridor.
- **Existing parks, greenways, and wildlife/ecological reserves,** which together consist of only a small fraction of the above priority ecological areas.

The Priority Ecological Areas for Conservation map does not yet consider: sensitive ecosystems missed by the Province’s SEI; marine habitat for conservation; completed watercourse inventory; shorelines; and a large parcel of crown land at the southern extent of the Comox Valley.

However, since the release of the report, the CV Land Trust has initiated mapping of the **shoreline and estuary** and the CVRD is funding a gap analysis to collect more data.

The report also underscores the importance of human interaction with nature, and outlines key areas for recreational greenway use. These are:

- One Spot Heritage Railway Trail
- Wellington Colliery Railway Trail
- Comox Lake to Comox Trail
- Brooklyn Creek Trail

Ecological Features

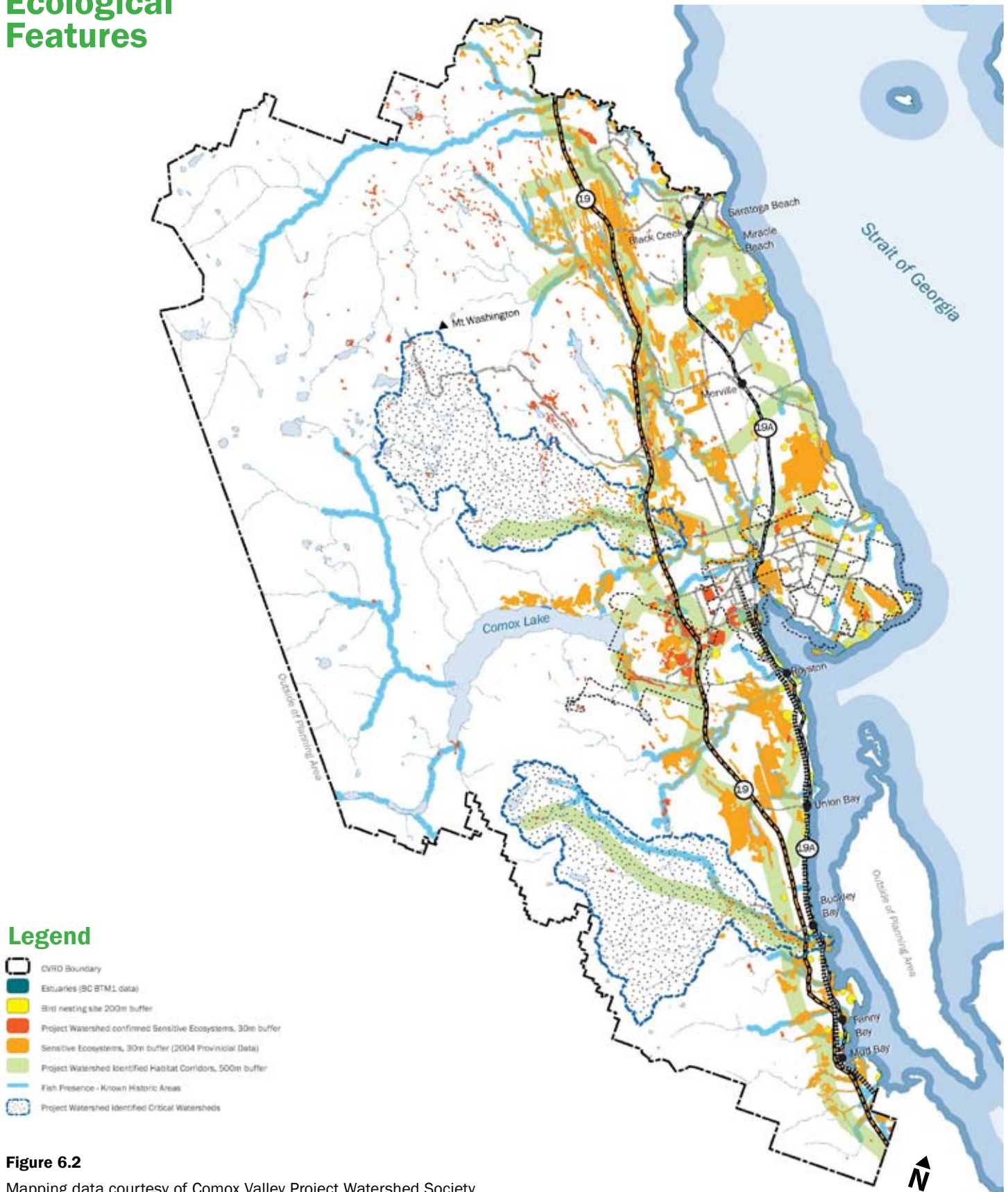


Figure 6.2
Mapping data courtesy of Comox Valley Project Watershed Society

CVRD Board and Nature Without Borders Regional Conservation Strategy

At the Board meeting of July 29, 2008, Regional Council:

Directed the Regional Growth Strategy to consider “The Comox Valley Land Trust Regional Conservation Strategy and associated conservation data”;

Endorsed regional conservation planning, as defined by Nature Without Borders: The Comox Valley Land Trust Regional Conservation Strategy, as a first step in land use and regional growth management planning;

Directed staff to ensure that rezoning applications for lands which include environmentally sensitive ecosystems, excluding Upland Wildlife Corridors as defined in Nature Without Borders: The Comox Valley Regional Conservation Strategy, include mapping and a detailed inventory of environmentally sensitive areas, a development impact assessment including, where relevant, the cumulative effects of any concurrent and subsequent development contemplated by the Official Community Plan and an impact mitigation plan.

Directed staff, based on Nature Without Borders: The Comox Valley Land Trust Regional Conservation Strategy, to work with the Comox Valley conservation strategy steering committee and Courtenay, Cumberland and Comox staff to identify cross-jurisdictional conservation projects and develop partnership opportunities for implementation of projects; and furthermore that the first of these projects be to:

Develop regionally consistent ecological greenway definitions which clearly distinguish them from recreational greenways and bring forward for consideration bylaw amendments to incorporate the new definitions into existing land use and servicing regulations; and
Undertake a policy and regulatory gap analysis of a multi-jurisdictional watershed.

Comox Valley Parks and Greenways Strategic Plan

The CVRD Parks Service mandate is to establish a network of parks and greenways that protect the natural diversity of the Comox Valley, and to provide opportunities for outdoor recreation and activities that foster appreciation and enjoyment of the natural environment. The Parks Service is currently developing a Parks and Greenways Strategic Plan for the three Electoral Areas: Baynes Sound (Area A), Lazo North (Area B), and Puntledge-Black Creek (Area C). Once prepared, the Strategic Plan can become an important tool for moving forward with the development of a regional parks and recreation network. Working with the other local governments, opportunities exist for the CVRD to foster conservation efforts and provide a greenways system that allows residents to interact with nature where appropriate.

A January 2009 CVRD household survey concluded that there is strong support for parks and conservation. Survey findings included:

- 66% of respondents or someone in their household visit a regional park at least once a month, including 7% who do so almost daily and 27% who use a park once or twice per week.
- 81% identified as the first, second or third most important benefit of regional parks as “protecting green space for walking, cycling and other non-motorized recreation.
- 73% identified protecting wildlife habitat and ecosystems as the first, second or third most important benefit of regional parks.
- 78% agreed with expanding the regional parks system by acquiring additional parkland.



Parks and Recreation Network

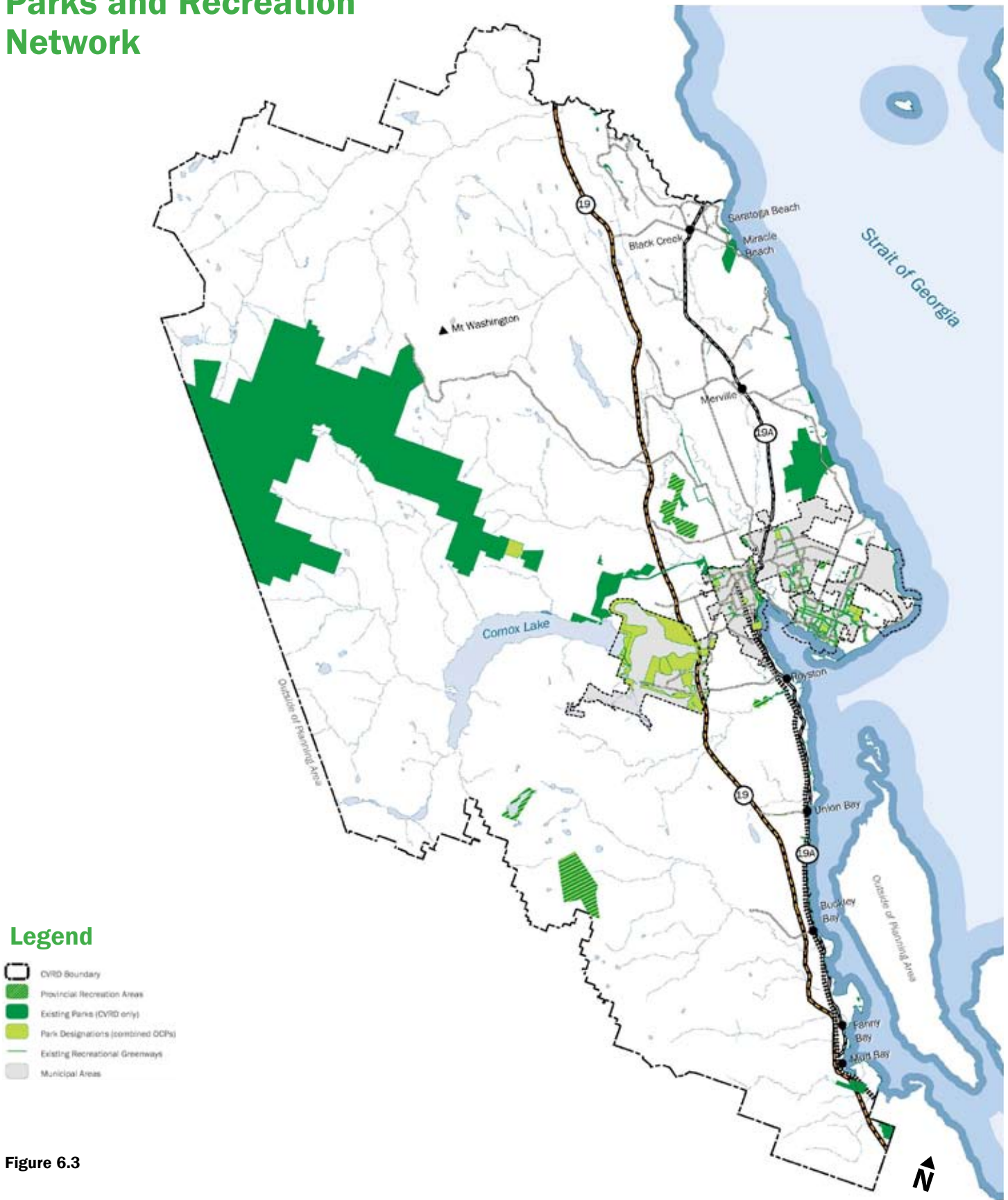


Figure 6.3

Land use planning tools for conservation

The concept of regional conservation strategy is a relatively new one for the Comox Valley and work on this subject is still in its early stages. The RGS process provides an ideal opportunity to draft, for the first time, a land use framework which positions regional conservation as an integral component of growth management.

Recognizing that a regional conservation strategy requires collaboration with all levels of government, and residents and landowners of Comox Valley, this section highlights the conservation tools available at regional and local levels of government.

Regional growth strategy – Local Government Act (Section 850) enables a regional district to adopt a regional growth strategy. The RGS must include proposed actions, to the extent that these are regional matters, to provide for the needs of the projected population in relation to parks and natural areas.

Official Community Plan (OCP) – An OCP is a statement of objectives and policies to guide decisions on planning and land use management, within the area covered by the plan, respecting the purposes of local government (Local Government Act, Section 875). An OCP must include statements and map designations for the area covered by the plan respecting restrictions on the use of land that is subject to hazardous conditions or that is environmentally

sensitive to development (Section 877). An OCP may include policies of the local government relating to the preservation, protection, restoration and enhancement of the natural environment, its ecosystems and biological diversity (Section 878).

Zoning – Local Government Act (Section 903) enables a local government to establish (a) different zones; (b) different uses within a zone; (c) different locations within a zone; (d) different standards of works and services provided; (e) different siting circumstances; (f) different protected heritage properties. Local governments also have the power to regulate to prohibit any use or uses in a zone. Zoning regulations are enforced by zoning bylaw.

Development Permit Area (DPA) – Local Government Act (Section 919. 1) enables an OCP to designate DPAs for the purpose of protecting the natural environment, its ecosystems and biological diversity. The OCP must (a) describe the special conditions or objectives that justify the designation and (b) specify guidelines respecting the manner by which the special conditions or objectives will be addressed. Barring any exemptions, a property owner is obligated to apply for a development permit within a designated DPA. The guidelines in the OCP direct what requirements are placed on the proposed development. For instance, an OCP could include a DPA to be applied to Environmentally Sensitive Areas in order to protect ecological integrity and the ESA DPA guideline in the OCP could specify that development applications include an inventory of flora and/or fauna, an environmental impact assessment, and a mitigation plan.

Development Permit – Local Government Act (Section 920) enables a development permit to do one or more of the following: (a) specify areas of land that must remain free of development, except in accordance with any conditions contained in the permit; (b) require specified natural features or areas to be preserved, protected, restored or enhanced in accordance with the permit; (c) require natural water courses to be dedicated; (d) require works to be constructed to preserve, protect, restore or enhance natural water courses or other specified natural features of the environment; (e) require protection measures, including that vegetation or trees be planted or retained in order to (i) preserve, protect, restore or enhance fish habitat or riparian areas, (ii) control drainage, or (iii) control erosion or protect banks.

Development Approval Information Areas – Local Government Act (Section 920.1) enables an OCP to specify circumstances and/or designate areas in which development approval information may be required in a DPA. The local government must, by bylaw, establish procedures and policies on the process for requiring development approval information. “Development approval information” means information on the anticipated impact of the proposed activity or development on the community including the natural environment of the area affected. The local government may require an applicant for (a) an amendment to a zoning bylaw, (b) a development permit, (c) a temporary commercial or industrial use permit to provide, at the applicant’s expense, development approval information in accordance with the procedures and policies contained in the OCP.

Development Cost Charges – Local Government Act (Section 933) enables a local government, by bylaw, to impose development cost charges on every person who obtains (a) approval of a subdivision, or (b) a building permit authorizing the construction, alteration or extension of a building or structure. Development cost charges may be imposed for the purpose of providing funds to assist the local government to pay the capital costs of providing and improving park land.

Disposition of regional parks and trails – Local Government Act (Section 941.1) enables a regional district, by bylaw adopted with the approval of the electors, to sell a regional park or regional trail or exchange it for other land to be used for park purposes.

Zoning Incentives – Local governments can consider incentives to encourage land developers to turn over additional areas to local governments for conservation e.g. by applying more favourable zoning on the remaining lands, such as an increase in density on the property in question or on a property in a different location.⁹

Conservation Covenants – B.C. Land Title Act (Section 218) enables a conservation covenant to be registered against the title to the land. A covenant is attached to the land regardless of change in land ownership. A local government or conservation groups may therefore acquire and hold conservation covenants over private land, without actually owning the land. A land owner may voluntarily register conservation covenant. A conservation covenant may be applied to the land to protect part or all of a property from development e.g. prevent subdivision, or prevent clearing of ground cover (e.g. trees, plants etc in some or all of a property), or prevent development within a specified distance from a sensitive environmental feature like a wetland or nesting site.

Statutory Right of Ways – B.C. Land Title Act (Section 218) enables a person to create or grant an easement, without a dominant tenement, to be known as a “statutory right of way” for any purpose necessary for the operation and maintenance of the grantee’s undertaking in favour of (a) the Crown or a Crown corporation or agency, or (b) a municipality, a regional district, among others. This provision can be used to negotiate a right of way for a public trail or greenway. A survey plan is normally registered at the same time as the right-of-way agreement delineating the boundaries of the right-of-way (Section 219).

Parks Function – The Local Government Act enables local governments to establish and operate parks. The CVRD was also given authority for two service functions for parks by Supplementary Letters Patent:

1. Community Parks Service function (1987) allows the Regional District to acquire and operate parkland within the three electoral areas, and allows the electoral areas to pool their resources for park operation, management and acquisition. This service also allows the Regional District to require 5% parkland dedication or cash in lieu at time of subdivision. The cash in lieu of land must be used to purchase other land for community park purpose. The 5% park dedication requirement does not apply where fewer than three additional lots are created (unless the lot being subdivided was created within the past five years), where the lots that are created are less than 2 hectares in size, or where the subdivision is a consolidation of existing parcels.
2. Regional Parks Service function (1971) is currently an inactive service for the CVRD. It allows the CVRD to raise money to fund acquisition, management and operation of regionally significant parkland that is used by residents region-wide. Financial participation in this function may be by the electoral areas only or, in recognition of the region-wide use of these parks, may include the municipalities.

Provision of park land: Local Government Act (Section 941) enables a local government to require an owner of land being subdivided, at the owner's option, to either (a) provide, without compensation, park land of an amount and in a location acceptable to the local government, or (b) pay to the municipality or regional district an amount that equals the market value of the land that may be required for park land purposes.

Official Community Plans

All four OCPs contain policies concerning the acquisition, management and maintenance of a greenways network, parks, open spaces and environmentally sensitive areas. Substantial variation may be found among the OCPs regarding development and rezoning tools for conservation. The following table is a high level comparison of tools that pertain to natural area conservation, including general policy for development permit and rezoning applications, Environmentally Sensitive Areas, Development Permit Areas, and requirements for impact assessment and/or biota inventory. The table is intended for illustrative purpose and interested individuals are encouraged to refer to the individual OCP documents for more detailed information.

High Level Comparison of Development Approval Policies

	Courtenay	Cumberland	Comox	Rural Areas
General Policy for Development Permit and Rezoning Applications	<ul style="list-style-type: none"> • Council will require environmental protection when dealing with subdivision and development permit applications • City will require integration of greenways within any new subdivision and developments • Rezoning applications may be requested to include park land (in the case of subdivision, in excess of 5% required under the Local Government Act); other greenbelt or open spaces; and covenants to protect environmentally sensitive areas 	<ul style="list-style-type: none"> • A Development Approval Information bylaw applicable within all Comprehensive Planning Areas will be adopted requiring developers to provide specific information about the anticipated social, environmental and economic impacts of the proposed activity on the community. • Developers of new subdivisions are to conform, where required, to Development Permits and land development guidelines that protect water quality, greenways and natural environment areas 	<ul style="list-style-type: none"> • May consider density bonusing at time of rezoning in exchange for land for park or greenway • Entire Town of Comox is established as a Development Approval Information Area • Town must adopt a bylaw setting out procedures and terms of reference for applicants with respect to approval information and must determine required information in consultation with applicant • Town may seek dedication and/ or construction of greenways at the time of development 	<ul style="list-style-type: none"> • Development Cost Charge bylaws shall be considered for adoption and implementation as a means to provide funding for the purchase of recreational lands, natural open space, and the development of these parcels for the benefit of the community.

Figure 6.4

	Courtenay	Cumberland	Comox	Rural Areas
ESA and DPA Policy	<ul style="list-style-type: none"> ESAs may be considered as parkland but not be considered as part of the required 5% dedication for parkland where applicable at the time of application for subdivision Environmentally Sensitive Areas (ESA) within the City include: watercourses including the sea, ponds, lakes, rivers, streams, natural drainage courses and wetlands; riparian and wildlife habitat; any significant geographical feature; and are generally outlined on Map #6, Environmental Development Permit Areas The City will protect ESAs through the application of the following: development permits; Tree Protection and Management Bylaw; acquisition/dedication of applicable lands; conservation covenants; joint ownership / management; increased buffer; amenity provisions through zoning Includes Environmental DPAs for protection of the natural environment, its ecosystems and biological diversity and for riparian area; this is not specific to ESAs 	<ul style="list-style-type: none"> Identifies Environmental Resource Comprehensive Planning Areas; these are areas specifically designated to manage development and preserve the ecological integrity within an environmentally sensitive area e.g. headwaters of a regional creek, a watershed or a designated wetland. Includes a DPA for ESAs 	<ul style="list-style-type: none"> New development in ESAs may be limited or prohibited Additional ESAs may be identified as new areas are incorporated into the Town Designates the following environmental DPAs: Foreshore, Riparian and Kye Bay; Includes guidelines for Riparian DPAs 	<ul style="list-style-type: none"> Protection of ESAs may be accomplished through legislated mechanisms such as, but not limited to, consideration of density transfer within the Plan area, density bonusing, development permit designations and the use of restrictive covenants. Designates the following DPAs: <ul style="list-style-type: none"> DPA No. 1: Aquatic ESA's, located within 30 metres (98.4 feet) of a watercourse where fish presence is confirmed Development Permit Area No. 2: Eagles Drive DPA No. 3: Eagle Nest Trees, located within 200 metres (656.2 feet) of a bald eagle nesting site DPA No. 4: Heron Nest Sites, located within 300 metres (984.3 feet) of the perimeter of a great blue heron colony

	Courtenay	Cumberland	Comox	Rural Areas
Impact Assessments and Inventories	<ul style="list-style-type: none"> • Applicable to all lands, the City may require an assessment to assess environmental impact of proposed development and to prescribe appropriate recommendations for mitigation, remediation and protection of habitat • The City will require a tree inventory assessment and an environmental impact study as part of the review of a Tree Cutting Permit for all properties over 1 hectare and within riparian areas where applicable 	<ul style="list-style-type: none"> • Requires all development proposals within Comprehensive Planning Areas to include a site specific sensitive biota inventory and an impact assessment of the proposed project upon all sensitive biota on and contiguous to the site. • Applications in ESA DPAs requires demonstration of an understanding of site's soils, slopes, and biota including preparation of an inventory map and basic written evaluation 	<ul style="list-style-type: none"> • Impact assessment required for development applications in Foreshore, Riparian and Kye Bay DPAs • Not specific to a DPA, applicants are expected to undertake impact studies on the natural environment of the area affected, including ground water and hazardous conditions such as slope stability, soil stability, erosion and flooding 	<ul style="list-style-type: none"> • Above 4 DPAs are required to include a biophysical assessment of the site and mitigation measures • Based on the bio-physical assessment of the site, works or protective measures may be required to preserve, protect, restore or enhance natural watercourses, fish habitat, riparian areas or eagle and great blue heron nesting sites, and from erosion.

Challenges Ahead

There are a number of challenges to realizing a regional conservation strategy, these include:

Lack of data: A complete ecosystem and species inventory has yet to be completed. This data is critical to achieving a level of conservation that will protect ecosystem and species diversity which meets the principles of conservation biology, securing a viable future for regional conservation. Comprehensive data on marine ecosystems is largely absent. However, working on an inventory should not hold up efforts to conserve areas that have already been identified as priority areas for conservation.

Land tenure: Publically held lands are most easily afforded conservation status. A majority of priority areas for conservation identified to date occur on privately owned land, and would require purchase, land swap, or voluntary conservation via a conservation covenant. The two largest land holders in the Valley are TimberWest and Island Timberlands. TimberWest has recently formed a separate arm, Couverdon, whose role it is to sell a portion of the former forest lands for development. Island Timberlands' operations remain focused on forest harvesting with the majority of their holdings in the Comox Valley south of the Trent River. Private forest lands fall largely within the CWH moist subzones, or temperate rainforest, and they contain the largest contiguous and relatively intact tracks of land, making them a consequential portion of the priority conservation areas.

Land Use Designation: The majority of priority conservation areas are designated for agriculture, resource or rural uses in OCPs. The permitted uses under the designations are often incompatible with the protection of fully functioning ecosystems. Resource use allows for activities which negatively impact ecosystems and the agricultural designation permits land to be cleared for

farming. In addition to habitat destruction, agricultural run-off can include fertilizers and pesticides which disrupt the delicate balance of waterways and riparian areas. Rural residential uses also can disturb and fragment sensitive ecosystems. However, the Environmental Farm Program (EFP) provides guidelines for farming which contribute to conservation (refer to Chapters 5 Agriculture and Food Security).

Multi-jurisdiction ecosystems: There are many instances where an ecosystem crosses into more than one jurisdiction. It will be important for an agreed upon conservation framework or protocol to be set in place in order to address this concern.

Wildlife corridors: Wildlife corridors must be continuous, though not necessarily wide, in order to be effective, offering safe passage from one protected area to another without interruption. This presents an enormous challenge because multiple land owners would need to protect the corridors which traverse their properties.

Recreation: As the Valley's population increases so too will the demand for recreation and access to nature for the sustenance of mental and physical health. While some recreational uses may be compatible with conservation areas, others may not. For example, ATV and snowmobile use can degrade an ecosystem.

Invasive species: The exponential spread of invasive species, in particular Scotch broom, Himalayan blackberry, English holly, Japanese knotweed, English ivy, and daphne is displacing native plants and the species that depend on them.

Habitat loss and fragmentation: Human settlement, agriculture, forestry and invasive species are the four largest causes of habitat loss and fragmentation. The challenge ahead is to achieve regional conservation while also allowing for these human activities.

Points for Discussion

This section identifies a range of strategies for the RGS to consider in relation to the conservation of the region's biodiversity and natural areas.

Support the development of a Regional Conservation Strategy

A Regional Conservation Strategy could be adopted across the region, using the priority areas for conservation identified by the SEI and in the Nature Without Borders report as the strategy's foundation. This could be a local government-led strategy, with the assistance of the Province and other government agencies, non-government environmental agencies and the public, that:

- utilizes ecosystem, habitat, and environmental inventories developed by environmental agencies such as the Ministry of Environment, Lands and Parks; Canadian Wildlife Service; Fisheries and Oceans Canada; and local non-governmental conservation organizations to identify a network of ecosystems that exist within the larger landscape; and,
- promotes connectivity between, and discourages fragmentation of, contiguous ecosystems and ecosystem components to preserve landscape diversity, and allow wildlife use, movement, and dispersal.

Representatives from the CVRD, local municipalities, Province, non-governmental organizations and private land owners could come together as a coordinating body or committee charged with steering a regional conservation strategy.

Identify priority areas for conservation

Sensitive Ecosystem Inventory information could be used across the region to 'red flag' areas for designation as Environmentally Sensitive Areas and Development Permit Areas. Environmentally Sensitive Areas (ESA) are areas formally designated as environmentally sensitive by the local government. ESAs are usually identified spatially on a map. ESAs are not applicable to Managed Forest Land subject to the Private Land Forest Practices Regulation or to "agricultural reserve lands" under the jurisdiction of the Agricultural Land Commission.

Development Permit Areas (DPA) or similar could be used for the purpose of protecting environmentally significant sites or types of areas e.g. buffers around streams, buffers around trees used for nesting by eagles and blue herons, wildlife corridors, and to prevent development of habitat for rare or endangered species e.g. protect Garry Oak trees from being cut down.

Establish a harmonized approach to conservation across the region

The establishment of a harmonized approach to conservation could include:

- Preservation of sensitive ecosystem areas in a natural condition, including the protection of fully functioning ecosystems, and maintain these areas free of development to the maximum extent wherever possible.
- Adopt consistent language for greenways e.g. ecological greenways and recreation greenways.
- Adopt consistent language for areas identified for conservation e.g. environmentally sensitive area (ESA), and sensitive ecosystems
- Identify a range of ESA and sensitive ecosystem policies. These could follow a spectrum from limited to no human access or development, to allowing for limited or specially defined activities, to full access, which in select circumstances, may include limited development opportunities in specified locations.
- Verification and groundtruthing of candidate ESAs and sensitive ecosystems that are additional to those in the SEI (e.g. as part of planning updates and development approvals).
- Regulations for site-specific development proposals and rezoning applications in areas designated as ESA or sensitive ecosystem. This could include detailed inventories, field studies, groundtruthing, development impact assessment, and a mitigation strategy to ensure that all habitat patches and species have been identified.
- Appropriate bylaws to require Development Approval Information at the time of rezoning or subdivision application for all ESAs and sensitive ecosystems. Procedures could be established and policies created for provision of such information e.g. provide criteria for the types of information to be provided, and its sources, quality, and reliability.

- Appropriate bylaws to protect special features e.g. at the time of rezoning, subdivision and development applications, for restrictive covenant, establishment of setbacks from environmentally sensitive features such as watercourses and nest trees; by laws for especially sensitive zones e.g. 'no access' or 'no disturbance' bylaws.
- Policies and programs for the eradication of invasive species which pose a threat to the survival of native species e.g. a program for private land to remove invasive plant species
- Development of a minimum target for the percent of land to be protected. It should be noted that there are differing opinions on what percent of land should be protected in order to maintain biodiversity over time. While in BC those percentages range from 12%-15%, consistent with the United Nations, conservation biology would likely increase that target to upwards of 25% per ecosystem.
- Consider the re-activation of the Regional Parks Service function across the region for the acquisition of regional conservation areas, maintenance and monitoring.
- Consider a review of the community parks service function. This function allows the CVRD to collect a 5% parkland dedication or cash in lieu at the time of subdivision. However, the CVRD has been acquiring small land parcels, rather than cash in-lieu, which are not appropriate for community or regional parks.
- Consider a harmonized Development Cost Charge (DCC) in Comox Valley for park land acquisition
- Consider a regional park levy in order to fund parkland acquisition, usually accomplished by referendum. Such levies exist in Metro Vancouver, Capital Regional District, Nanaimo, Central Okanagan and East Kootney.

Include provisions for land acquisition and management of Environmentally Sensitive Areas and sensitive ecosystems

It will be necessary in some instances to acquire lands for conservation. The following is a list of funding ideas for land acquisition and for the management of ESAs sensitive ecosystems with priority for conservation:

- Approach the Province for funding e.g. for land acquisition, groundtruthing, and management
- Financial incentives for private land holders to voluntarily place a conservation covenant or similar agreement on their lands i.e. reduced property taxes, density bonusing and/or density transfer in return for conservation lands.
- Partner with conservation organizations and stewardship groups in acquiring ESA lands, and in negotiating conservation covenants with landowners and with the Province in respect to Crown lands.



CHAPTER 7

Regional Services

Introduction

Regional District Services and Growth Management

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Introduction

This chapter provides an overview of the regional district services that will form a part of the RGS. Namely, it deals with ‘hard’ services – water, sewer and solid waste. These services are each governed by a separate and complex series of laws and regulations with no single coordinating agency or enforcement body. The extent and nature of regional oversight is also different for each service. In addition, each individual service is delivered through a separate infrastructure and delivery system with its own unique characteristics and issues.

In this chapter, water, sewer and solid waste services and their relationship to regional growth are discussed in three separate sections. Each section begins with a review of the system of infrastructure and programs that allow service delivery. This is followed by an overview of the government bodies and legislation that govern the provision of the service. Finally, each section discusses a number of issues surrounding the relationship between population growth and the individual service under discussion. A closing section at the end of the chapter reviews some points for discussion for the RGS to consider in servicing growth in the Region.

In planning for regional district services, there are two crucial points to keep in mind.

1. The ability to provide these services is directly tied to the ability of the valley to absorb growth. The region’s water operators can only provide so much water without taking necessary flow away from the fisheries or farmers or BC Hydro. Likewise there are limits on the valley’s capacity for the disposal of both garbage and sewage.
2. Infrastructure-intensive services such as these have high associated costs in terms of construction, operation and maintenance. Every additional metre of water main or sewer pipe entails higher initial costs of construction, and higher annual costs of service and repair.

The planning of regional district services is directly linked to land use planning. The more dispersed our settlement patterns, the more our infrastructure must be extended, the more expensive it is, and the greater impact it will have. Due to their potential impact and cost, extensions of these services must be carefully considered. Proper land use planning must, therefore, be the driver of infrastructure. The RGS provides a key opportunity to come together as a region and discuss our priorities and objectives for land use patterns, services, and infrastructure.

There are two other long-range planning efforts being undertaken in conjunction with the RGS, a regional sewer plan and a regional water supply strategy. The regional water supply strategy will provide a long-term plan for domestic water supply based on an assessment of available water supply sources, water quality and treatment, the capacities of the distribution system and the cost of service provision. The regional sewer plan will create a rational long-term plan for managing liquid waste based on an assessment of current levels of service and potential treatment options. The RGS is being developed along with the regional sewer plan and regional water supply strategy and will help to coordinate the planning of growth with the provision of services. This chapter is intended to provide the necessary background to begin a region-wide conversation on the relationship between population growth and regional district services.

Regional Services and Growth Management

The key services of water, sanitary sewer, storm sewer and solid waste are affected by the type of land use adopted throughout the Comox Valley. Delivered well, these services provide sanitation, and control disease. These are services often taken for granted, with the associated infrastructure buried below ground. However, their importance is such that proof of sufficient supply is generally a condition of development approval. Infrastructure extensions must, therefore, be guided by an understanding of where and how growth should occur considering the capacity of, and infrastructure costs associate with, these services.

Water

In the Comox Valley, water is arguably the greatest limiting factor to growth. High levels of population growth coupled with high consumption levels have placed a strain on water supply and delivery systems. As we move forward with the growth strategy, we must keep in mind that the nature and pattern of future growth will have a great impact on the Valley's water supply and delivery infrastructure. Development that proceeds without sufficient attention paid to impact on the Valley's water system will place a strain on the fiscal and environmental health of the Comox Valley. Conversely, development which seeks to minimize water consumption, while maximizing the efficiency of water delivery will help to ensure that future generations of Comox Valley residents can provide for their own water needs.

When considering water service provision, there are two separate but related issues: water quality and water quantity. This section focuses almost exclusively on water quantity. While urban and regional growth affects water quality, these problems can be mitigated through the enactment of various site planning measures and engineering standards. Water quality issues will be dealt with in detail by the Regional Water supply strategy.

Water Systems in the Comox Valley

Comox Lake is the largest in the Comox Valley and the primary point of supply for the region. Just how much water can be extracted from this system is guided by the various licenses that have been granted as outlined in the 2004 BC Hydro Water Use Plan for the Comox River. The Plan fully divides the majority of available water in this system between the three licenses of the Department of Fisheries and Oceans, BC Hydro, and the CVRD (Figure 7.1). The Ministry of Environment and the Integrated Land Management Bureau issue licenses. Licensees are granted extractions (or diversions) of water generally measured in cubic metres per second.⁴

Water Licenses on Comox Lake in m³/s

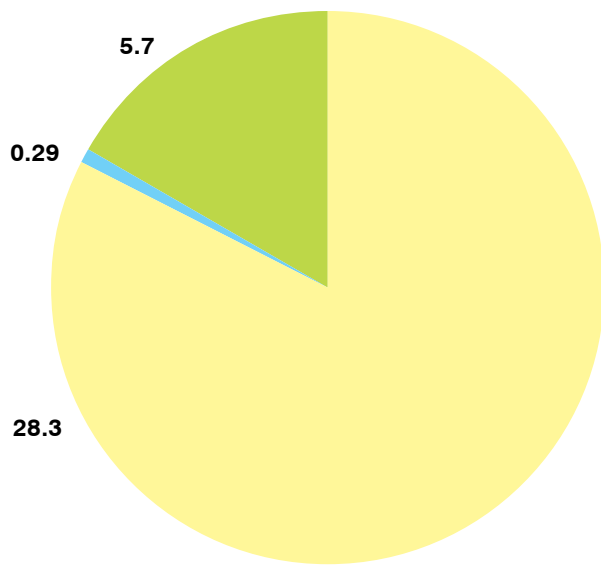


Figure 7.1

- BC Hydro
- Department of Fisheries and Oceans
- Comox Valley Regional District

Water is extracted from the following sources:

- Water is normally extracted from the BC Hydro Penstock, just upstream of the Puntledge generating station.
- During limited times of the year, water is extracted directly from the Puntledge River, just downstream of the generating station. The raw water is then chlorinated and distributed by the Region to Local Service Areas in the three Electoral Areas and the municipal delivery systems of Courtenay and Comox. The CVRD currently charges all water purveyors it provides a bulk rate of \$0.47/1000 litres.
- Allen Lake (drawn at Perseverance Creek) and Henderson Pond (drawn at Cumberland Creek), fed to four main reservoirs, and distributed via two 300 mm supply mains to residents in Cumberland and the Royston Improvement District which serves residents in the Royston area of Electoral Area A - Baynes Sound. The Royston Improvement District supplies its customers through bulk water purchases from Cumberland Public Works. In 2003 the Village of Cumberland added a license to the waters of the Vanwest Lakes to bolster its water supply. Cumberland currently has water licenses for extraction at a rate of 9690 m³/day up from its former license of 5,673m³/day.
- Langley Lake serves as the water source for the Union Bay Improvement District from Spindrift to Fraser and Gartley Point to Kentwood. The Union Bay Improvement District 's water license is for 20.5L/s.
- Tsolum River is the water source for the Mission Hill area of Courtenay and is provided by the Sandwick Improvement District through an infiltration gallery² adjacent the river.
- Watutco Enterprises Ltd. Draws water from the Oyster River to supply the Saratoga Beach Area.
- Cowie Creek and two source wells provide the source of water for Tstable River and south to the Ship's Point Improvement District. This water is provided by Fanny Bay Waterworks.

- Three groundwater source wells provide water for the Ship's Point Improvement District, whose general boundaries are Ships Point Road, Tozer Road, Baynes Drive, Vivian Way and Wentle Way.
- Mount Washington's water is drawn from private wells.
- The sources of water for the Bates Beach Boathouse, Mosley Road Water Supply Society, 0698013 B.C. Ltd., Alders Beach Resort, Tranquility Bay Water, Black Creek / Oyster Water are not available at this time. This information is expected to become available as the Water System Inventory, undertaken as part of the Regional Water supply strategy, progresses.

The information provided above should not be taken to be a definitive list of water users in the Comox Valley RGS area, but rather an attempt to briefly describe the major systems in operation.

Comox Lake Regional Water System

Water is drawn from an intake at the Puntledge River through transmission (supply) mains to the Regional chlorination facility where the water is chlorinated to standards set by the Canadian Drinking Water Guidelines. Next, water is pumped to reservoirs closer to the Courtenay, Comox and the Local Service Areas. Transmission mains that run under or along streets take water from the reservoirs through cities, towns and villages. Distribution mains deliver water from transmission mains to individual houses or buildings.

Jurisdiction

In British Columbia, the provision of water is regulated by over 20 federal government bodies, seven provincial agencies, 29 regional authorities, 157 municipalities, over 200 improvement districts, numerous crown corporations and non-governmental organizations. For the purposes of growth planning in the Comox Valley, the following governmental bodies and organizations have direct relevance.

Federal and Provincial

Federal and Provincial

The following table lists the federal and provincial ministries that touch on water.

	Ministries	Primary Area of Water Jurisdiction
Provincial Ministries	Ministry of Health	water quality standards
	Ministry of Environment	"water licenses (in concert with Integrated Land Management Bureau); water supply management "
	Ministry of Forests and Range	forestry and grazing practices affecting water quantity and quality
	Ministry of Agriculture and Lands	agricultural practices affecting water quantity and quality
	Ministry of Transport	subdivision approval authority, roads and highways
	Ministry of Energy, Mines and Petroleum Resources	energy, mining and petroleum extraction affecting water quality and quantity
	Ministry of Community Services	regional and community planning; water system planning
	Integrated Land Management Bureau	provincial land use and resource management planning
	Vancouver Island Health Authority	VIHA Drinking Water Officer administers the regulations of the Drinking Water Protection Act
Federal Ministries	Environment Canada	"national water quality standards; health of fisheries; First Nations drinking water supply; water infrastructure "
	Department of Fisheries and Oceans	fishery and ocean regulation
	Department of Indian Affairs and Northern Development	water on First Nations reserves
	Department of Agriculture and Agri-Food	"agricultural practices affecting water; protection and enhancement of agricultural water supply"
	Transport Canada	federal highways; marine transportation
	Health Canada	national drinking water and food processing guidelines

Figure 7.2

Regional Districts

Regional districts are the planning authorities for rural, unincorporated areas. As such, their decisions directly affect water use and water provision. Regional districts have historically negotiated with residents of their unincorporated areas to determine the level of service provision. Regional districts are also responsible for the creation of regional growth strategies which direct the location and nature of growth within their boundaries. Regional district services, such as water, are one of several important topics that Regional Growth Strategies must engage.

The CVRD, as a water operator licensed by the Ministry of Environment, distributes water directly to several Local Service Areas in the three Electoral Areas and sections of Denman Island. In addition, the CVRD distributes bulk water to Courtenay and Comox, which in turn distributes it to residents through their municipal delivery systems. In addition, certain areas in the valley receive water via an Improvement district.

Municipalities

Under the Local Government Act (2006) municipalities have the authority to provide water to residents. Municipalities can obtain water directly from a water source through a water license, or indirectly through another operator, such as a Regional District. Water provision considers infrastructure costs and water capacity, which is regulated through licensing. Municipalities are also responsible for land use planning decisions that directly affect water use and water service provision. In the CVRD Comox and Courtenay obtain their water from the CVRD directly, while Cumberland obtains its water from Allen and Henderson Lakes.

Improvement Districts

Improvement districts are autonomous local authorities governed by elected trustees focused on providing services to local landowners. They are granted, through provincially issued Letters Patent, powers to provide specific services to an area within a set boundary. These powers include the ability to enact and enforce regulations and charges, to assess and collect taxes, to acquire, hold and dispose of lands, to borrow money and to expropriate lands required to carry out its functions. Improvement Districts must conform to regional growth strategies.

The RGS study area includes five Improvement Districts: Ship's Point Improvement District, Fanny Bay Waterworks District, Union Bay Improvement District, Royston Improvement District and Sandwick Improvement District. Water is the primary service provided by each of these Improvement Districts.

Private Water Utilities

Persons or businesses that own or operate equipment or facilities for the delivery of domestic water - are also permitted to provide water within the Province of British Columbia. The Ministry of Environment regulates these utilities.

There are a number of private water utilities in the CVRD: Watutco Enterprises Ltd, Mount Washington Alpine Ski Resort Ltd., Bates Beach Boathouse, Mosley Road Water Supply Society, and 0698013 B.C. Ltd., Alders Beach Resort, and Tranquility Bay Water.

Private Wells

Areas are found in Merville, Dove Creek, Point Holmes, Plateau Road, and other rural areas throughout the CVRD where private residents supply water to their homes independent of a public or private water operator, usually via private wells.

Water Supply Related Policies

This sub-section provides a summary of local and regional water supply related policies.

Rural Comox Valley OCP

The CVRD's Rural Comox Valley OCP contains a number of policies related to the conservation of water supply and reduction in water demand. The OCP places a priority on the protection of water resources, as the plan's second overarching goal is to "protect the quality and quantity of ground water and surface water." This goal is supported by several policies.

One Environmental Quality Policy states:

- The land use policies in the Plan shall work to ensure an adequate supply and quality of water for fish bearing streams and existing settlement and economic activities.

Local Community Service, Tourist Services and Highway Services, and Industrial policies set out that the criteria for evaluation of proposals for new development shall include:

- Compatibility of intended use with adjacent land and water uses and natural resource areas;
- the provision of adequate water supply

Further objectives and policies supporting the goal of supply protection and the reduction of demand include:

- To reduce potable water consumption
- Water meters shall be encouraged to be installed on all community water systems.
- Low flow appliances and fittings shall be required in all new dwellings or structures to promote reduction in potable water consumption.
- Land owners, local municipalities and senior government agencies shall be encouraged to work cooperatively with the Regional District in the undertaking of water supply studies to

identify future demand for water both from resource industries, in particular agriculture, and from residential and other urban land uses, and determine the most economically and environmentally appropriate methods of meeting future water needs of the Comox Valley.

- Working cooperatively with land owners, local government, senior government agencies, non-governmental organizations and the public on the water supply study

The CVRD has several other important non-OCP bylaws relating to water demand and supply:

- The Regional District of Comox-Strathcona Water Supply Development Cost Charges Bylaw 2001 and subsequent 2006 amendment create a development cost charges structure to provide funds to assist the CVRD to pay the cost of providing, altering or expanding water facilities, increasing supply or building storage improvements.
- Bylaw 2867 is a three stage water conservation bylaw which places residents on an odd/even day alternating lawn watering schedule and restricts lawn watering and other activities such as filling pools during times of peak demand. There are also a number of other bylaws governing water fees and bulk water rates.

Courtenay OCP

The City of Courtenay also has a number of policies governing water supply:

- Only make municipal water and/or sewer services available to areas within municipal boundaries.
- Continue to lead efforts in storm water management, water supply, garbage and sewage disposal to protect the environment
- Seek methods to continue to protect the Comox Lake Watershed
- The City supports the protection of groundwater sources and surface water supplies

One significant aspect of the Courtenay OCP water supply policy is the incorporation of the Water Balance Model, a stormwater management system that encourages the retention of stormwater for reuse within developments. The City has several policies supporting this model of development.

Most importantly the Courtenay OCP has an entire section on water supply that contains a number of strong policies:

- The City is committed to maintain a program of establishing looped mains and to replace undersized mains where required.
- For new development, a computer evaluation of system improvements is required, concentrating on reservoir locations, water main sizing and distribution.
- The Comox Valley Water System [will] not be expanded beyond the current boundaries, prior to an area becoming part of a municipality.
- The City [will] not support any increase in the capacity or extension of the water system outside a municipal boundary.
- The City support implementation of a water-metering program for all properties within the water system.

Comox OCP

Policies concerning water supply and demand are also found in the Town of Comox's OCP:

- The Town does not support any major water consuming use that would jeopardize the fish bearing capability of watercourses.
- Where practical, all new development and redevelopment requiring potable water service must be connected to the Town's water system.
- Upgrade the water distribution system as identified in the Town's Water Report and if necessary update the Water Report every five years.
- Maintain and investigate expanding water conservation measures, including the implementation of universal metering.
- Conduct a regular review of the Town's water service model to ensure adequate supply of water for future growth.

Beyond the OCP policy the town of Comox also address water supply and demands through these other provisions;

- The Comox subdivision and development servicing by-law requires metres for SFO containing secondary suites.
- Third reading is given to amendments to require metering for all SFO, Commercial, Multifamily and Institutional for all SFO.
- Commercial, Multifamily, Industrial and Institutional buildings are required to be metred.

Cumberland OCP

The Village of Cumberland's OCP has the fewest policies related to the preservation of water supply and water demand management. The OCP has the protection of the "quality and quantity of groundwater and surface water," as a primary land use principle, in addition to the objective to:

- Protect the fish-bearing capacity of local waterways from negative impact by new development through the application of a variety of environmental standards including water conservation where appropriate.

Cumberland's OCP also seeks to reduce capital and operational costs through the employment of green infrastructure. Green infrastructure is defined in the OCP as "maintaining and designing natural landscapes within developed areas that utilize the capabilities of soil and vegetation to absorb and filter stormwater." However, except for these policies pertaining to site design techniques which effectively manage stormwater, there are no polices that directly address water conservation through community organization or demand management techniques.

Issues

The Role of Water in Growth – Population and employment growth cannot occur in the Comox Valley without an adequate supply of water. Emphasis must be placed on the location and phasing of future development, in relation to servicing capacity and infrastructure. Water plays a special role in planning for regional growth and development. Because its supply is a prerequisite of development, the provision of water to an area is one way to expedite or catalyze growth in that location. Likewise, restricting the provision of water to specific sensitive areas is a strategic means of ensuring that development does not occur in such places. It should be noted that in the Electoral Areas there is no stormwater system for land clearing activities.

Supply and Demand – A number of additional water-related issues present themselves when considering the future growth of the Comox Valley. Ultimately, these issues come back to the question of supply. The available supply of water in each area of the Comox Valley will ultimately determine the amount of development that can occur. Nearly as important is the issue of cost. While it may always, in theory, be possible to find water for development (you can always drill deeper, transport over greater distance, or use more advanced technologies to obtain it) in reality, costs, both economic and environmental, will determine whether or not water is available.

Demand is also a key consideration – Methods of engineering and design can play a great role in the amount of water consumed by a given development. Traditional development is water and infrastructure intensive. The sprinkling and irrigation of extensive gardens, lawns and golf courses causes such a draw on water resources in the Comox Valley that water consumption increases from an annual average of 675 litres per person day to nearly 2000 litres per person per day during the driest summer days. The average Canadian uses approximately 630 litres /day. This figure includes water for residences, small commercial and industrial buildings, water lost through leaks and water used for

fire fighting. Considering only household water use, the average Canadian uses around 340 litres per day. This is an extremely high number, given that humans only require five litres on a daily basis for survival, or 60-80 litres when we consider sanitation, food preparation and bathing. Water consumption levels of Comox Valley residents are twice as high as the average person in France and eight times as high as the average Dane.³

By planning development intelligently and efficiently, water use can be reduced dramatically. Further reductions are possible through water conserving methods of engineering, architecture, urban design and landscaping. Just as importantly, changing the water consumption behavior of people in the region can lead to a dramatic reduction in water use.

Lot size – The sprinkling and irrigation of lawns, filling of swimming pools, washing of cars and driveways, can account for between 50 -70 percent of household water use annually. Lawn watering alone can easily make up 50 percent of household water usage. This largely accounts for the tripling of Comox's water consumption levels during the summer. A study of water usage in Seattle found that an increase in density from 4 housing units per acre to 12 housing units per acre led to a 158 percent decrease in water used for landscaping. This was attributed to a decrease in private landscaped open space. There have been similar findings for cities across the United States and Canada. The implication is clear: homes set on large open lots require vastly larger amounts of water on an annual basis.

Additionally, homes on larger lots require more expensive infrastructure, as the distance between buildings and transmission mains is invariably greater. This distribution infrastructure accounts for higher share of total infrastructure and pumping costs than does transmission infrastructure.

Density and leakage – The leakage of water delivery systems is a widespread problem. No system is completely watertight. Depending on their age, quality of construction and maintenance,

water systems on average can lose between 6 to 25 percent of their total flow through breaks and leaks. The City of Montreal is famously now losing a full 40 percent of its potable water through its crumbling water mains.

Aside from age, length and system pressure are the two important determinants of leakage. Longer systems with more pipes and more connections tend to leak more than shorter ones. Higher pressure must be maintained on systems that transport water over greater distances. Thus, developments that are lower density and more spread out will likely require longer systems, whereas shorter systems serving compact development can be much more water efficient.

New vs. Old Infrastructure Investment – The Canadian Waterworks Association and the Federation of Canadian Municipalities recognize a growing gap in infrastructure spending in BC. This means a growing backlog in infrastructure in need of repair or replacement. According to the FCM, over 33 percent of water distribution infrastructure in Canada's older cities reached the end of its service life in 2002, with another 34 percent set to reach that state by 2020. Governments at all levels will have to develop new means of financing the replacement of these ageing pipes, pumps, reservoirs and treatment plants.

Investment in new infrastructure rather than older failing infrastructure can perpetuate this problem, if crucial municipal resources are diverted from needed repairs. The extension of regional and municipal infrastructure to development in new locations can absorb funds more prudently spent renovating existing infrastructure and adds an additional burden on taxpayers to cover long term capital and operational costs. Additionally, the capital and operational costs of infrastructure vary directly with proximity to existing development. For every kilometer a building or neighbourhood is from a central pumping facility, the more expensive its services will be.

Development that occurs within the existing service area, can often take advantage of existing excess water system capacity; distributing the system's capital costs over an enlarged tax base, and reducing the costs per resident. Where development within a water service area must add capacity, or requires additional or upgraded infrastructure, it can provide an invaluable source of funding to alleviate municipal infrastructure deficits. Development within or immediately adjacent to existing urban areas can thus be an effective means of financing the replacement of ageing water infrastructure while cutting the overall costs of water provision.

Water Quality – In addition to the supply of water, the collection and management of stormwater is an important component of ensuring the overall health of the Comox Valley waterways and natural areas. As development occurs and impermeable areas increase, stormwater management becomes a larger concern. Modern management techniques are moving from engineered solutions to replication of natural collection and cleaning of water (e.g. ponds, grading). This approach can be further enhanced through increasing the amount of permeable areas required in new developments.

Sewer

The provision of sewer services shares a number of similarities with the provision of water services. Sewage treatment is among the most elementary services provided by local governments. The disposal of sewage or liquid waste is of such importance that it is a prerequisite of new development. Guiding the extension of trunk sewer services to the appropriate location at the appropriate time is a strategic means of controlling the pattern of growth.

While not always the case, large trunk sewer services are generally laid at the same time as water transmission mains. Decisions concerning these services are best made in tandem. However, within the Comox Valley there remain a number of exceptions to this general rule. Sewer services are not always communal; many rural villages still provide for sewage through private septic systems. This occurs even in areas which are serviced by communal water systems, such as those provided through Improvement Districts or private water utilities.

However, regardless of the manner in which provided, sewer services are a critical element to consider in planning for the future development of the Comox Valley. These infrastructure decisions must be guided by a solid understanding of where and how the people of the Comox valley want growth to occur.

Sewer Systems in the Comox Valley

There are presently three communal sewer systems in operation in the Comox Valley. One system serves the City of Courtenay, the Town of Comox and CFB Comox, a second services a subdivision on Jackson Drive, and a third serves the Village of Cumberland. The first two systems are owned and operated by the CVRD,

while the Village of Cumberland operates the latter. The sewage disposal needs of those areas of the Comox Valley not contained within these three service areas are presently provided for by small, private septic systems. The three communal water systems are below below:

1. Courtenay, Comox and CFB Comox Sewer Service

The City of Courtenay and the Town of Comox maintain separate sanitary sewer collection systems and storm sewer systems within their municipal boundaries. The sanitary sewer collection systems discharge sewage into the Regional sewer system at local lift stations.

Daily, over 14,000 cubic meters of sewage from these municipalities and the Canadian Forces Base is transported via two forcemains to the Comox Valley Water Pollution Control Centre (CVWPCC). This secondary treatment facility was constructed in 1984. Treated effluent from the plant is released three kilometers from shore in the Strait of Georgia in 80 meters of water. The plant's sludge is composted using aerated static piles, and a portion of this material is incorporated into the CVRD's innovative biosolids composting program. The final product is sold as a nutrient rich compost under the brand name, Skyrocket.

2. Jackson Drive Sewer Service

This local package sewage treatment system was requested of a developer of lands along Jackson Drive by the Regional District to replace an older, failing sewer system. The system is paid for by residents by means of a parcel tax.

3. Cumberland Sewer Service

The Village of Cumberland maintains its own separate sewer system. Wastewater from this combined sanitary and storm sewer system is treated through an aerated sewage lagoon. Treated effluent is discharged to Maple Lake Creek, and a settling pond is utilized to store final precipitates. The Village is in the process of completing a Liquid Waste Management Plan. The plan will likely result in the recommendation of significantly expanded treatment facilities, and the separation of combined storm and sanitary sewers to increase the capacity of the existing sewage treatment system and sewage lagoons.

Current Projects

In addition to these sewer systems the CVRD has, in the past several years, been working in the creation of Liquid Waste Management plans with the goal of creating communal sanitary sewer systems in certain areas. The Saratoga Beach and Miracle Beach communities began a Liquid Waste Management planning process in 2001 that went through initial planning phases, but was ultimately voted down in a referendum. Royston and Union Bay went through a similar process from 2003 to present. Although the Liquid Waste Management Plan has been approved, federal and provincial funds to begin construction have, as of yet, not been forthcoming. The communities of Marsden and Arden are also involved in the creation of Liquid Waste Management Plans.

Jurisdiction

In Canada, there are two pieces of Federal legislation which pertain to municipal liquid waste disposal: the Canadian Environmental Protection Act, overseen by Environment Canada, and the Fisheries Act, overseen by the Department of Fisheries and Oceans. These govern the collection and treatment of liquid waste, especially as regards the discharge and disposal of raw and treated sewage.

In British Columbia, the Local Government Act and the Community Charter, overseen by the Ministry of Community Development enable local government to provide and plan for wastewater services. The actual process of sewage collection, treatment and disposal is regulated by the Ministry of Environment and the Ministry of Health. Through the Environmental Management Act and the Municipal Sewage Regulation, the Ministry of Environment regulates community sewer systems. Through the Health Act and the Sewage System Regulation, the Ministry of Health Services governs on-site septic systems.

Through OCPs, local governments plan for development and infrastructure. This includes the identification of suitable urban and rural areas, the expected sequence of urban / rural land development and the timing, location and phasing of trunk sewer services. In addition, regions and municipalities, through their OCPs, may choose to favour communal or individual treatment options.

Where OCPs do not contain detailed plans for sewage infrastructure, a Liquid Waste Management Plan, provided for under the Environmental Management Act, may serve to address these deficiencies. Liquid Waste Management Plans may be undertaken by municipalities or regional districts. They are composed of strategies to plan for future development, an implementation schedule, and operational certificates that ensure waste disposal conforms to Ministry objectives. The Regional Sewer Strategy will serve as a Liquid Waste Management Plan. It will be coordinated with the RGS to ensure consistency between growth management and sewage infrastructure

Sewer Related Policies

This section reviews the policies of the local and regional governments OCPs regarding the provision of sewer services. While each local government has policies relative to the degree to which they have control over infrastructure, there are no specific policies dealing with the relationship between sewage infrastructure and the phasing or location of growth. None of the local governments in the Comox Valley set out the location or phasing of major sewer services as directed in the Local Government Act in any great detail. Nor do they pertain to the relationship between the provision of sewer services and the timing or pattern of growth.

Rural Comox Valley OCP

The Rural OCP addresses sewers through several different types of policies:

1. The plan sets out policies restricting further development of unserved subdivisions and only allowing developments serviced by community wastewater systems within Rural Settlement Areas.
2. The Plan lays out policies supporting innovative types of wastewater technologies.
3. The Plan also supports the creation of Liquid Waste Management Plans and Development Cost Charges Bylaws where:
 - The preparation, adoption and implementation of a Liquid Waste Management Plan for the rural electoral areas of the Comox Valley shall be supported.
 - Where deemed appropriate by a Liquid Waste Management Plan, Development Cost Charges, and Local Service Areas bylaws shall be considered as a means of ensuring the appropriate collection, treatment, and disposal of all wastewaters.
4. The plan outlines policies that demonstrate the intent of the region to work with other jurisdictions within the CVRD to accomplish the goals of the OCP. Finally the OCP directs that all Electoral Area Plans and Local Area Plans must address wastewater and stormwater.

Courtenay OCP

The policies in the City of Courtenay's OCP reflect its lack of jurisdiction over sanitary sewage treatment, and pertain solely to collection and transmission:

- For major new developments, the City shall consider the downstream capacity of existing sewer mains to ensure adequate capacity.
- Efforts shall continue to reduce infiltration which has a negative impact on the treatment facilities.

- The Comox Valley Sewerage System will be limited to areas within municipal boundaries.
- The City through the development of a Master Sewer Strategy will develop strategies to facilitate providing alternative trunk networks and systems to transport effluent to treatment facilities.

The City's policies surrounding storm sewers are more comprehensive. As the City continues to use natural drainage courses as the primary storm drainage, policies focus on minimizing storm flows to these water bodies through the use of a Water Balance Model, protecting these riparian corridors from development, and "mitigating the impacts of development on the drainage system to protect the quality of the river systems" through the use of such technologies as oil and grit interceptors.

Comox OCP

The Town of Comox has a single policy regarding sanitary sewer systems:

- where practical, all new development and redevelopment requiring sewage disposal must be connected to the Town's sanitary sewer system;

Its policies governing storm sewers are slightly broader:

- New developments are required to provide storm water collection; generally, storm water must connect to the Town's storm water collection systems;
- New developments may be required to provide facilities to limit negative impacts to fish and other aquatic habitat;
- Storm water run-off must be retained within its originating watershed, wherever feasible; and
- Storm water retention facilities may be used where required to minimize the downstream impact of storm water

Cumberland OCP

The Village of Cumberland's OCP contains two wastewater related objectives:

- Ensure sanitary sewage collection, treatment, and disposal facilities are maintained to appropriate standards, and mitigate any environmental effects from these systems.
- Provide a system of stormwater drainage, which has zero net impact on the natural drainage systems.

The focus on green infrastructure throughout Cumberland's OCP is in large part to mitigate the infrastructure and operational costs of storm sewer provision. Within all Comprehensive Planning Areas, development applicants must demonstrate that site selection and planning have given consideration to:

- Existing infrastructure, including sanitary sewers, water supply lines and stormwater facilities (both formal and informal) and their relationship to the proposed development program;
- Opportunities and constraints for on-site stormwater management including factors such as natural storage and soil infiltration.
- Stormwater management must, among a number of other objectives, provide "for retention of 90 percent of more of total annual rainfall."

Issues

Density of Development – The density of development is a key factor determining the cost of sewer systems. Lot size, road width, overall form and design of communities: all of these contribute to the outlay of sewer services. Infrastructure costs within new developments are the largest component of the total cost of new infrastructure. Compact development has been shown to reduce the costs of municipal infrastructure, minimizing the number of distribution mains and associated pumping and lift stations.

Location of Growth and Infrastructure Investment – While the costs of infrastructure within new developments can often be passed on to the eventual home and building owners by ensuring prices include those costs, the costs of the community-level

infrastructure required to service new growth, such as trunk sewer mains, are frequently passed on to the community as a whole. The strategic siting of growth is therefore of paramount importance in minimizing the tax burden placed on to community residents.

Investments made by Federal and Provincial governments in regional and municipal sewer systems have been dramatically reduced over the past several decades. The trend has generally been towards a shifting of the responsibility for infrastructure funding to regional and municipal governments. In many places this has resulted in a backlog of needed infrastructure investments.

In the Comox Valley, signs of needed sewage infrastructure investment have been visible for some time. Leaking septic systems continue to threaten the waters of Baynes Sound. As a result of septic system seepage, the Union Bay shellfish industry has been closed to harvesting since 1969, and other coastal fisheries remain threatened. It is clear that a strategy for infrastructure investment is needed.

Locating growth in or immediately adjacent to established communities can provide a vehicle for infrastructure investment. Properly funded, upgrades needed to service this growth can benefit residents of both new and existing development without adding an additional burden.

A 2002 study, published in the Journal of the American Planning Association, used an engineering cost model to determine the influence of density on the cost of sewer and water services. The study found that the total cost of servicing a house on a 0.25 acre lot in a compact development near the location where water was pumped and sewage was treated was \$143/yr. The same house, with the same demand on services, on a 1 acre lot in the same location would cost \$272/yr to service. Holding water and sewer use constant, if the house were moved to a 1 acre site far from the pumping and treatment facilities would increase to \$388 per year.

Solid Waste

Solid waste services are another key piece of regional and municipal service delivery that are intimately tied to development. Growth in population and employment will entail growth in household, business and industrial wastes. However, unlike water and sewer services, the connections between municipal solid waste services and the form and location of growth and development are not as direct.

The issues surrounding municipal solid waste are primarily related to the scale of development and bulk of material produced, rather than the form that development takes. That said, properly planning growth in the region means ensuring that disposal, recycling and compost facilities are strategically located relative to new development and that land use planning supports regional solid waste programs and policies.

Summary of Solid Waste Systems in the Comox Valley

Rural Comox Valley

The CVRD currently has in place a number of wide reaching programs for waste reduction, administered through the Solid Waste Management Plan:

Public Education and Promotion

Public education and promotion programs are coordinated through a regional education and promotion plan. Education initiatives include the Province's Eco Education BC program for schools and a Master Composter Program, which trains volunteers in community composting techniques to help in their neighbourhoods. The CVRD operates a Compost Education Centre in Courtenay that provides a demonstration ground for the regional biosolid waste program and wide ranging environmental action education for visitors

Reduction and Reuse

To provide incentive for reduction and reuse, the Region is evaluating user-pay initiatives on a case-by-case basis. The CVRD is planning to promote reuse and repair centres in CVRD publications.

Material Collection and Recycling

The CVRD currently runs a number of Multi Material Drop off Depots throughout the CVRD to facilitate the collection of recyclable materials.

Compost

The CVRD operates a cutting-edge biosolids program where wood chips are mixed with the solid treated waste products from the wastewater treatment process and are composted into a usable nutrient-rich mulch for gardens. This product, marketed under the name Sky Rocket compost is available for sale to bulk retail outlets, developers, landscapers, nurseries or individual citizens.

The region is investigating means of incorporating green wastes – leaves, chipped wood, food waste into this program.

Town of Comox

Emterra Environmental hauls Comox's refuse to the Pidgeon Lake Landfill. Weekly service is provided to approximately 3,150 homes. Comox has a one can, 121 litre, limit and charges a fee for the service.

In January 2008 Comox initiated curb side "blue box" pick-up for recyclables. The former public works yard where residents dropped off yard waste was also replaced in January 2007 with a curb side collection program. Curb side collection now picks up yard compostable such as leaves, grass or branches.

City of Courtenay

Salish Disposal hauls Courtenay's refuse to the Pidgeon Lake Landfill. Salish also handles the City's Industrial, Commercial and Institutional waste. Weekly service is provided to roughly 6000 homes. There is a weekly limit of one 121 litre bag. A fee of \$7.50/month plus \$1.25 per additional bag is charged for households, \$6.50 for apartment units.

Salish also collects household recycling every second week through a residential blue box program. Households pay \$12 per year for this service. City residents can also drop-off recyclables to the Pidgeon Lake Landfill, at Multi Material Drop off Depot sites such as Thrifty Foods, Courtenay Country Market, and Driftwood Mall, or at the Courtenay Return Centre, which provides refunds for beverage containers. In addition, a number of private recycling firms offer recyclable collection to businesses and homes. There is no municipally offered centralized composting program.

Village of Cumberland

Cumberland's refuse is hauled by Sun Coast Waste to the Pidgeon Lake Landfill. There is a two can maximum and residents are only charged extra if they exceed this maximum.

Cumberland residents can drop off recyclables at the Pidgeon Lake Landfill. At least one private company offers curbside recycling for a fee.

The Village does not have a centralized composting program.

Jurisdiction

Federally, Environment Canada and the Department of Fisheries and Oceans regulate aspects of Municipal Solid Waste pertaining to transboundary (interprovincial, international) and oceanic movements of hazardous waste, hazardous recyclable material and non-hazardous waste through the Canadian Environmental Protection Act and the Fisheries Act, respectively. In addition, the DFO and Environment Canada set national standards for water quality which must be respected by landfills and waste treatment facilities.

In BC, the Ministry of Environment (MoE) regulates solid waste services through the Environmental Management Act. The Environmental Management Act establishes that regional districts have the authority to make bylaws regulating the management of municipal solid waste and recyclable material and to establish Solid Waste Management Plans. In addition the MoE has established a series of guidelines pertaining to the disposal of waste, such as Establishing Transfer Stations for Municipal Solid Waste and Landfill Criteria for Municipal Solid Waste. The British Columbia Water Quality Guidelines (Criteria): 1998 Edition (BCWQG), and the Compendium of Working Water Quality Guidelines for British Columbia (CWWQG), provide the criteria used to evaluate ground water quality around landfills.

The CVRD prepared an update of its Solid Waste Management

Plan in 2003. This plan regulates all aspects of municipal solid waste, from reduction and reuse, to public education and promotion programs, to material collection and landfill options. Through this plan, the CVRD oversees the region's waste management system.

In the CVRD, Emterra Environmental is the licensed hauler for Courtenay and Comox, while Sun Coast Waste is the hauler for Cumberland. Solid waste collection in the areas of the region outside of Courtenay, Comox, and Cumberland is provided by private collection firms on a subscription basis.

Current Solid Waste Related Policies

The City of Courtenay's OCP incorporates solid waste management policy. The Rural Comox Valley OCP establishes criteria for the evaluation of commercial development solid waste, and recommends that all applications within Development Permit Areas 6 and 7 should "include a plan for waste minimization and recycling during the construction phase". Solid waste management in the CVRD is governed by the 2003 Solid Waste Management Plan that outlines the status of and policies for solid waste management in the region. As such, it forms the basis for the above discussion of the waste management system in the CVRD.

The City of Courtenay OCP notes the City's priority to "continue

to lead in efforts to reduce the amount of solid waste going to landfill" through the following initiatives:

- Education, promotion, advertising
- Encouraging recycling
- Encouraging home composting
- Review user fees
- Supporting recycling facilities within major commercial and industrial developments
- Encouraging mandatory garbage collection for the Comox Valley

A single policy in the Town of Comox's OCP mentions solid waste. Specifically, it states that the municipality "does not envision the need for solid waste disposal or sewer waste disposal sites within the Town's boundaries."

The Village of Cumberland's OCP does not include policies on Solid Waste.

Issues

Growth and Solid Waste Collection. The pattern of growth to a large extent determines the efficiency of municipal refuse and recycling services. Towns and rural areas with widely dispersed homes and businesses find it difficult to operate low cost, economically-efficient curbside collection. Growth which occurs in a sporadic fashion can exacerbate this problem, making rural areas more difficult and costly to service. Conversely, by focusing growth within or near existing urban areas, collection becomes more efficient, as trucks travel shorter distances to service the same population.

Landfill Space. With growth in the CVRD comes an increase in the amount of solid waste the region will have to manage. The anticipated closure of the Campbell River Waste Management Centre landfill, which currently takes in the waste from Campbell River north and west, including Quadra and Cortes islands will add significantly to the waste handled by the Pidgeon Lake Landfill. Plans currently involve the construction of a transfer station in Campbell River and the diversion of waste from Campbell River to the Pidgeon Lake Facility. This will decrease the lifespan of the landfill significantly from its planned year of closure in 2032. Space has been set aside for a new landfill on adjacent property owned by the CVRD. The new landfill is planned as a full modern facility with a liner, and leachate and landfill gas collection capabilities.

Economic and Environmental Costs. Landfills and waste collection systems are expensive to operate, and contribute to the overall tax burden placed on regional residents. They also entail enormous environmental costs. The process of collection itself is fossil fuel intensive; garbage trucks and other heavy machinery used at landfills emit large amounts of carbon dioxide and other environmentally harmful emissions. Gases, such as methane, emitted from landfills contribute to global warming, and in the Comox Valley account for 19% of the region's total Green House Gas emissions. Leachate from poorly designed and ageing landfills can enter the water table and cause additional environmental harm. This can be especially dangerous where hazardous wastes find their way into the general refuse stream.

Refuse is symptomatic of a larger system of unsustainable resource production and consumption. There are harmful environmental impacts throughout the supply chain of all consumer good, from the initial harvesting of raw materials to primary production, manufacturing, packaging and transportation. By focusing on demand-side measures (reduction, reuse and recycling strategies) impacts can be further mitigated.

Points for Discussion

This section provides a series of policy ideas related to water, sewer and solid waste services for the RGS to consider. These ideas are based on a thorough review of technical reports and policy documents pertaining to regional district service systems in the CVRD, and a review of current growth patterns.

Plan and phase infrastructure extensions carefully

The location of sewer and water services is a major factor in the siting of new development. Growth is more likely to occur where these services exist in abundant supply. Extending sewer and water mains to one development often has the side effect of catalyzing growth along the supply line, as development in these areas becomes easier to justify. This has historically been one of the main causes of urban and rural sprawl. One way to help ensure that development only occurs in appropriate areas is to concretely identify the key areas where growth makes sense, and phase development from existing serviced areas outwards. In this way, infrastructure extensions are guided by careful land use planning; phasing the extension of infrastructure reinforces the phasing of development. The following policies could be considered in the RGS:

- Ensuring that all Electoral Area and municipal plans contain maps with the location and planned phasing of trunk water and sewer services.

Encourage more cost-effective development

Growth in the Comox Valley will require significant investments in infrastructure. Over their lifespan, these infrastructure systems entail large capital, operational and maintenance costs – costs which are passed on to the taxpayer. Sound fiscal management and regional planning should seek to mitigate these costs to the

greatest extent possible. Organizing development in an efficient pattern is a key means to achieve this objective. Development that is closer to existing communities, is more compact and effectively organized saves on water transmission and delivery, liquid waste collection and solid waste collection costs. The RGS could consider the following policy:

- Encouraging local governments to establish policies for successive development wherein locations closest to the already built up areas must be developed first, before other areas are considered.

Encourage and support water conservation

As is the case in every jurisdiction in BC, water supplies in the Comox Valley are finite. In order to ensure an adequate supply of fresh water for humans, fisheries, and the rest of the natural environment, water conservation is by far the most cost effective strategy for the CVRD to consider. Water conservation means less demand at times of peak supply and in turn it means less investment is necessary in new and upgraded infrastructure. Simple planning measures, like reducing the lot size of new developments, can be very effective in saving water. The installation of water meters throughout the CVRD would also contribute to the positive effect. Replacing old, leaking water mains can increase efficiency of water consumption up to 25 percent in some locations.

In existing and new development the use of drought resistant crops in landscaping can reduce irrigation and sprinkling needs. A stormwater management system for new development, such as that embraced by the City of Courtenay and implemented in several commercial developments (Wal-Mart, Home Depot) sees developments take charge of holding and treating storm water runoff on site, allowing only clean and treated water back into the water system. The RGS could introduce some of these policies:

- Encourage all local governments to embrace a “Water Balance Model” approach stormwater management that requires developed sites to mimic natural systems for all new development.

- Encourage the use of drought resistant landscaping in public, commercial and residential developments.
- Encourage smaller lot development and support higher density development in existing town centres to help reduce lawn watering and manicured spaces.
- Continue supporting universal water metering.

Prioritize investment in infrastructure replacement

Replacing ageing infrastructure in the Comox Valley could be made a top priority for regional investment. Leaking water mains and seeping septic systems are inefficient, costly, and harmful to the water table. The anticipated growth in the Comox Valley, if properly managed, can be harnessed to help cover the costs of replacing existing infrastructure. By locating new development within or proximate to existing development, existing systems are replaced or upgraded rather than having entirely new systems built. Consider, for example, the following ideas:

- Support directing a proportion of new development to existing town centres to reduce infrastructure servicing needs and leverage associated cost savings to improve and rehabilitate existing services.
- Encourage new development to aid in replacing ageing sewer infrastructure.

Turn waste into a renewable resource

The Skyrocket compost initiative has been a resounding success, with the region not only selling out supplies faster than it can produce them, but turning the success of the program itself into a vehicle for public education. The region could embrace this story as a new business model. Liquid waste can have other uses as well – such as electricity generation.

The City of Prince George has recently installed five new turbines at its sewage treatment plant which burns compressed gas emitted from the sewage and is reconstituted to produce 40 percent of the plant's power. The cost of the investment is expected to be offset by utility savings in nine years. The

new Pigeon Lake landfill is planned to incorporate a similar technology, capturing and burning the landfill gasses to create electricity. These technologies have the additional benefit of reducing the amount of atmospheric carbon created.

Recyclable and compostable materials are also valuable renewable resources. By embracing a Zero Waste Strategy, the region could announce its commitment to a more sustainable economy, and begin the transition in earnest. A re-examination of user pay fees would be a key part of this strategy, ensuring that it is as easy for citizens to compost and recycle. A properly structured user pay system can support a more effective, wider reaching, and inclusive system of collection and processing. A regional and municipal purchasing policy designed to support sustainable consumption and waste management practices is another key action for consideration. The following policies could be established.

- Formally endorse a Zero Waste Strategy and begin planning efforts to achieve it.
- Investigate the possibility of lowering property taxes in direct proportion to increased fees for curbside garbage collection.
- Become a leader in landfill gas recovery and electricity generation when the new Pigeon Lake landfill is constructed by ensuring a high environmental standard of design.
- Explore the potential of capturing landfill gases at the existing Pigeon Lake facility.



CHAPTER 8

Public Health & Safety

Introduction

Relationship Between Land Use and Population Health

Population Health Impacts in Comox Valley

Healthy Built Environments and Active Transportation

Variables That Influence Active Transportation Choices

Active Transportation Plans and Policy

Public Safety

Trends and Issues

Points for Discussion

Introduction

This chapter summarizes the connections between how communities in the Comox Valley are built and the health and safety of the people living in them. Pulling from recent and new research, it provides an overview of current land use planning-related health trends in the Comox Valley, and highlights potential land use choices that could generate more positive population health outcomes and better support public safety.

This chapter is unique in that community health and safety has not been included as a topic in any previous Regional Growth Strategy in B.C. The CVRD Board, with the support of the regional Medical Health Officer, recommended the inclusion of the broader concept of community health. More traditional public safety concerns such as fire and emergency services are also included.

While this chapter recognizes that there is a broad range of health and public safety issues, it focuses on those topics with the strongest land use connections that are most relevant to the RGS.

Relationship Between Land Use and Population Health¹

There is a large body of research that suggests a significant relationship between urban and rural form and population health outcomes. There are particularly strong links between personal transportation choices and health risk factors, such as between the lack of physical activity and obesity, which in turn are linked to chronic diseases, notably cardiovascular disease, chronic respiratory disease, diabetes and cancer. Here it should be noted that physical activity is one of the most significant modifiable behavioural factors that can influence the likelihood of becoming overweight or obese and, by extension, developing a chronic disease or dying prematurely.

The built environment² has also been shown to influence a range of other factors that can influence an individual's ability to make healthy choices, as well as ultimately the state of their physical and mental health, as well as life expectancy. From a land use perspective, access to affordable housing, healthy food, recreational opportunities, education, and early childhood development opportunities can all promote better health. Health professionals refer to these factors as the "social determinants" of health or "health inequities" and believe strongly that they must be addressed to improve population health. A 2001 Senate report on the health of Canadians estimated that the social and economic environment was the major determinant of population health outcomes in Canada, responsible for 50% of the ultimate health outcome of individuals, while the physical or built environment was responsible for an estimated 10%.

Linking the Built Environment to Population Health: The “Ripple Effect”

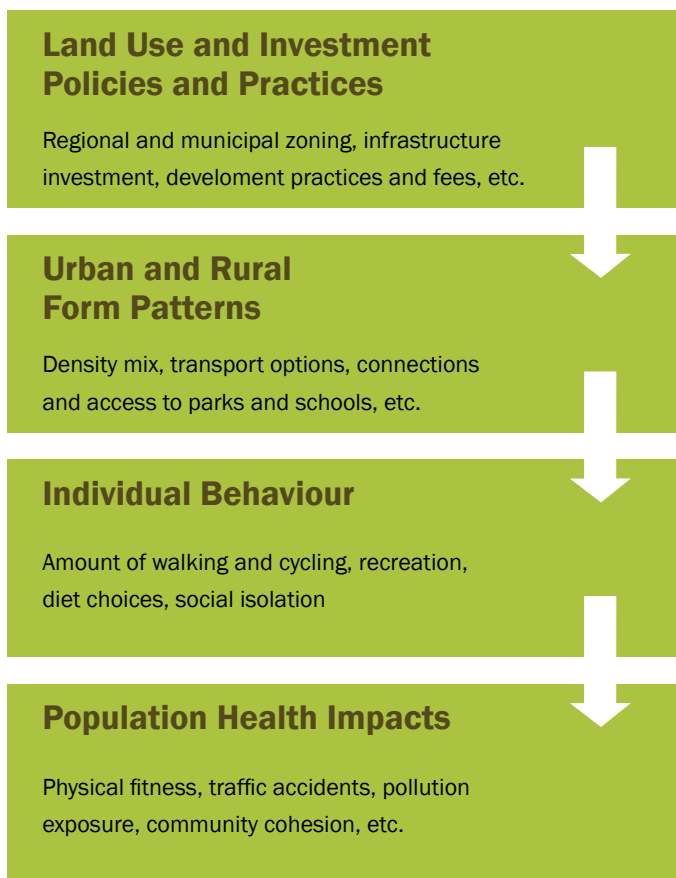


Figure 8.1

This figure illustrates how planning policies, such as those expressed in Regional Growth Strategies and Official Community Plans, influence individual behaviour that ultimately generates direct and indirect population health impacts. Planning and public health researchers refer to the land use influences as the “Ripple Effect”.

BC’s Provincial Health Services Authority (PHSA) – the province’s overarching health authority – recognizes the role of community and neighbourhood design in improving population health. Since 2003, PHSA and other health and local government partners have worked together on a province-wide Healthy Living Alliance initiative to support and promote “healthy” built environments that create more opportunities for physical activity, healthier lifestyles and active transportation.³

Awareness around healthy built environments is still growing in both the health and planning communities. Similar to planning for climate change, PHSA and other organizations (e.g., BC Recreation and Parks Association, BC Cancer Association, etc.) believe that healthy built environments will emerge as a driving land use planning concern as the awareness of health impacts and costs (human and financial) continues to grow.

Population Health Impacts in Comox Valley

The so-called ripple effect is present in the Comox Valley where land use policies have helped separate land uses and made active transportation a more challenging undertaking for many residents. However, there is also an opportunity to build on the Comox Valley’s natural setting and impressive recreational opportunities to develop healthier built environments and support more active, healthy lifestyles.

In terms of population health impacts, physical fitness levels have declined and obesity rates have increased to near epidemic proportions in Comox Valley and province-wide. Exposure to air pollutants has also gone up and with it childhood asthma rates to alarming, near epidemic levels. Research conducted by national, provincial and regional health agencies confirms the following facts:

- Over 18% of the population aged 18+ in the North Vancouver Island Health Service Delivery Area (HSDA)⁴ are obese, the highest of the three HSDAs on the Island;
- Approximately 20% of seniors (65+) in the Comox Valley are obese, the highest rate of anywhere in the province;
- The number of individuals with high risk Body Mass Indexes⁵ in the North Vancouver Island HSDA increased between 5% and 10% between 2001 and 2005;
- The Courtenay Local Health Area (LHA)⁶ had the second highest rate of deaths due to diabetes on Vancouver Island, and the highest of any predominantly non-aboriginal community for 2000-2004;
- The Courtenay LHA had the second highest rate of deaths due to chronic lung disease on Vancouver Island for 2000-2004;
- The Courtenay LHA had the highest rate of deaths due to diseases of the respiratory system for any non-industrial LHA;⁷
- The leading cause of death in the Courtenay LHA is circulatory system related diseases, accounting for over 30% of all deaths in the region, or roughly the same as provincial and national rates (circulatory system diseases have been closely linked to lifestyle and fitness levels);
- The rate of overweight children in BC nearly tripled since 1981;
- In BC, the “inactivity level” in youth averages 58%;
- One in three overweight or obese children will become diabetic in BC; and,
- Asthma is the most common chronic childhood disease in BC (and across Canada).

Public Health and Recreation

Comox Valley is widely regarded as an outdoor recreation paradise that is also served by a good range of public recreation facilities. Together, they present a considerable opportunity to support and encourage healthy, active living in the Comox Valley. Recreation providers and health professionals could also work together to better promote and engage residents in indoor and outdoor physical activities and advocate for healthy change in the community.

Further illustrating the links between land use, neighbourhood design and population health, a major study of Metro Vancouver just released in April 2009 made the following findings:⁸

- Residents living in the most walkable areas of each region (i.e., the top quartile of walkability) were half as likely to be overweight than those in the least walkable neighbourhoods;
- Residents living in the most connected areas (i.e., in the highest quartile of intersection density) were half as likely to be overweight as those living in the lowest quartile;
- Residents living in areas with the highest quartile of retail floor space ratio (where retail is set up against the street) were half as likely to be overweight as those living in the lowest quartile (where retail is set behind surface parking lots); and,
- Each additional grocery store within about a kilometre distance was associated with an 11% reduction in the likelihood of being overweight.

Healthy Built Environments and Active Transportation

While there are many factors that influence population health outcomes in the Comox Valley (i.e. access to clean air and water, affordable housing, recreation, education, healthy food, etc.), primary consideration should be given to active transportation strategies because it can help to facilitate more active lifestyles and physical activity, thereby improving the long term health status of individuals in the Comox Valley. A focus on active transportation in no way discounts the importance of the other health influences, but recognizes that of all the health factors, it is perhaps most closely related to regional land use planning and the RGS.

To be sure, the relationship between the built environment and active transportation is key to understanding the broader concept of healthy built environments. Many studies, including the recent UBC study discussed above, have shown a significant relationship between the built environment and active transportation choices. The UBC study, and many studies like it, explored how the built environment affects active transportation choices and “which variables in the built environment exert the most significant relationships with physical activity patterns”.⁹

Variables That Influence Active Transportation Choices

In general, research has identified three interdependent variables in the built environment that have the most significant influence on active transportation choices: density, land use mix, and street network connectivity. Together, these variables affect how close destinations are to each other and how easy it is to get to those destinations. Each variable is broadly defined below.

- 1. Density:** As a measure of urban and rural form, density can be measured in a number of different ways including the number of people, jobs or buildings in a given area. Higher densities typically increase the number of potential destinations located within a geographic area, increase proximity between destinations, reduce travel distances, and increase the likelihood of walking, bicycling or transit use. Current research suggest that most people will readily walk to destinations up to 800 metres away, with one kilometre being the distance that most people will decide to drive to the store, school, service, etc.
- 2. Land Use Mix:** Land use mix refers to the number of different types of land uses (residential, recreational, commercial, institutional, etc.) within a given area. Mixing land uses increases the diversity of destinations in a given area, thereby reducing the distance required to travel to a variety of destinations. Land use mix is positively associated with physical activity because it shortens trip distances, encourages people to walk and/or bicycle, and makes recreational opportunities easier to access.
- 3. Street Network Connectivity:** Connectivity is a measure of the efficiency of the transportation network and refers to the directness of links and the number of connections in the path or road network. A well-connected road or path network has many short links, numerous intersections, and minimal dead-ends (cul-de-sacs). Street networks influence the specific route and mode of transportation that people use. As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations and encouraging more active transportation choices.

The figure on the following page summarizes the general state of each of the built environment variables in the Comox Valley.

Active Transportation Plans and Policy

None of the region's current OCPs specifically address community health and well-being, or make the link between land use and population health. Both Courtenay's and Comox's OCPs do, however, seek to encourage active, or alternative transportation.

The Comox Valley Cycling Plan (2007) was prepared by The Comox Valley Cycling Task Force with the expressed goal being to help standardize terminology, standards and bikeway design throughout the Comox Valley. The plan recommended that all jurisdictions recognize and promote cycling as a viable mode of transportation in addition to recreations and that a comprehensive communication strategy be designed to encourage this activity.

The draft Town of Comox Bicycle Plan (1995) gives emphasis to bicycle routes and lanes "chosen on the basis of their proximity to significant bicycle destination points, and their ability to meet the needs of each user group." The proposed network received strong support from the public and a limited number of on-street routes have been developed.

Courtenay's Bicycle Planning Strategy was adopted in 1995 as well, and is intended to "promote and encourage cycling as a commuting alternative to the automobile and as a means of active recreation." There are currently limited on-street bicycle routes, signage and amenities (e.g., bike racks).

Built Environment Variables That Affect Transportation Behaviour

Variable	Comox Valley Highlights
Density	<ul style="list-style-type: none"> • Population density in Comox Valley is 5.1 people per square kilometre, slightly higher than the provincial average of 4.2 people per square kilometre. • Current population densities in Courtenay and Comox are comparable to similar BC cities and towns, but 30% to 50% below conventional density thresholds required for “intermediate” or “frequent” local bus service (20 to 40 buses per day respectively).¹⁰ • Region-wide, transit mode share is below BC averages (2% vs. 10%)¹¹ • Cumberland and the Electoral Areas have lower population densities and correspondingly limited services, amenities and jobs.
Land Use Mix	<ul style="list-style-type: none"> • Limited to moderate mix of land uses in central town centres and activity centres. • In Comox town centre there is some mixing of uses (e.g., retail shops, offices and apartments) in very close proximity and/or in the same building, while Courtenay and Cumberland town centres tend to be primarily commercial retail. • Single-use residential areas dominate away from town centres, with very limited land use mix.
Street Network Connectivity	<ul style="list-style-type: none"> • More traditional street grid in older areas near town centres. • Less connected cul-de-sac and curvilinear street pattern in more recent residential developments (i.e. mid-1960s to present). • Limited bike, trail and pedestrian connections/networks. • Region-wide, private vehicle mode share (as a driver) is higher than BC averages (79% vs. 72%). • No regional bike, pedestrian or greenway network is currently in place, although Comox Valley is currently preparing a Regional Greenway Strategy and a Comox Valley bicycle was prepared in December 2007. • Locally, internal bike and pedestrian networks are basic with few traffic-separated routes. • Courtenay and Town of Comox have older bicycle network plans(1995), and the latter has not been adopted. • No inter-city/town connections in place. • Sidewalk standards vary across the region. • No integrated, region-wide, active or alternative transportation plans.

Figure 8.2

Public Safety

Public safety includes ambulance, police, health and fire protection services. Currently, the Comox Valley is served by the BC Ambulance Service, which has three ambulance stations in the region – in Courtenay, Cumberland and Denman Island. Policing services are provided region-wide by the RCMP whose main, 30-member detachment is located in downtown Courtenay.

Twenty-nine long-term, locum GPs and 64 specialists with hospital privileges at St. Joseph's provide health services in the area. The specialists include general surgeons, orthopedics, dermatology, obstetrics/gynecology, ear nose and throat, dental, anesthesiologists, emergency room physicians, internists, pediatricians, radiologists, urologists, psychiatrists, and ophthalmologists.

Comox Valley boasts a regional hospital facility in Comox at St. Joseph's General Hospital, a 234-bed acute care and continuing care facility with 940 employees, including 360 regular full-time employees, 240 regular part-time employees and 340 casual employees. The facility is operated in partnership with the Vancouver Island Health Authority.

Currently, the Vancouver Island Health Authority is considering a new 140-150 bed regional hospital to replace St. Joseph's. The services currently provided by St. Joseph's would be provided in the new hospital. The new Comox Valley hospital would include 40 to 50 beds for regional services such as psychiatric emergency and intensive care and enhanced cancer care. Should the new facility be developed, it will be of significant benefit to the community, particularly if the facility is developed as a

community-focused health promoting hospital rather than a more conventional "institutional" facility. As a more community-focused facility, the new hospital could help bring more community programs to its site and make some services more accessible in the community. Additionally, the location of a new hospital could have significant land use implications for the region.

The CVRD has established plans and programs for emergency preparedness, mitigation, response and recovery. The Comox Valley Emergency Program provides coordinated assistance and organizational structure in dealing with emergency situations and disasters in the Valley. Neighbourhood emergency preparedness (NEPP) courses are held throughout the year to train residents.

Fire service is a particularly important issue that has demanded extra attention in the RGS planning process. Comox Valley contains 18 Fire Protection Areas, serviced by 10 fire departments. The various fire halls operate independently, but have a mutual aid agreement with neighbouring jurisdictions. Fire Protection Areas generally have an 8-kilometre service range. Response times vary considerably, depending on availability of volunteer crews, time of year, and time of calls.

Five full-time and approximately forty paid-on-call employees staff the Comox Fire Department, while Courtenay's fire department has a total of 5 career and 42-45 paid on-call firefighters who respond to both emergency and non emergency calls within Courtenay and surrounding fire protection districts. Cumberland's fire department has one paid, full-time member.

Currently, there are gaps in fire protection service in the Comox Valley, perhaps most notably the resort area of Mount Washington. A referendum held in 2003 asking landowners to contribute to the cost of services was rejected. A solution to this issue is currently being sought by the CVRD Board.

Fire protection services in Comox Valley

Planning Area	Fire Department
City of Courtenay	Courtenay Fire Department
Town of Comox	Comox Fire Department
Village of Cumberland	Cumberland Fire Department
Electoral Area A	Courtenay, Ships Point, Union Bay and Fanny Bay Fire Departments
Electoral Area B	Courtenay and Comox Fire Departments
Electoral Area C	Courtenay and Oyster River Fire Departments

Figure 8.3

Another potential fire safety concern involves some of the major new developments proposed for the Comox Valley. Two developments in particular, Sage Hills and Kensington, propose adding approximately 5,100 new housing units to areas covered by volunteer fire services. The scale of the developments may pose some logistical challenges and, potentially, could require the responsible departments to acquire additional equipment and/or crewmembers. Both of the developments are also located on former forestry land, pushing development further into the wildland urban interface zone. This zone is defined as the areas where structures and other human development meet with wildland areas containing flammable vegetation such as trees and grasses. A fire in this area is called an interface fire.

In 2004, the province initiated a review called Firestorm 2003, after the devastating fires in the Thompson-Okanagan. The review resulted in recommendations for reducing fire fuel build up in British Columbia's interface including:

- Fuel-treatment pilot projects in locations of high interface fire risk (i.e., controlled burning);
- On-site removal or burning of forest slash to reduce fire fuel hazards; and,
- Assessment of fire-prone ecosystems within or adjacent to a wildland urban interface zone for risk reduction.

The review stated that, "governments and individuals share responsibility for fireproofing communities and developments that may be affected by interface wildfires". As recommended by the province, the CVRD has begun interface fire hazard mapping to identify high-risk areas. This work has yet to be completed and a region-wide Wildfire Protection Plan has yet to be developed.

This section summarizes major land use planning-related population health and public safety trends and issues identified through chapter research.

Growing awareness of population health – land use connections: The CVRD is the first regional district in BC to formally recognize the connections between land use planning and population health outcomes. This awareness will continue to grow through the development of the RGS and its implementation. The regional Medical Health Officer is also a proponent of healthy built environments and will be able to support and encourage a better understanding of the population health impacts of land

Trends and Issues

use decisions. As a new field of interest and engagement, the Provincial Health Services Authority is planning on developing a formal position and work plan to promote healthy built environments which will support the Vancouver Island Health Authority to gradually become more engaged in the review of land use developments from a population health perspective. Additionally, should a new regional hospital come to fruition, the location of the hospital will need to be planned carefully to maximize its benefits and integrate it into the surrounding community.

Increasing physical inactivity and obesity: Body Mass Index (a method of classifying body weight according to health risk) in the Comox Valley is increasing. Currently, over 18% of the population aged 18+ in the local Health Service Delivery Area (HSDA) are obese, the highest of the three HSDAs on the Island. In addition, approximately 20% of seniors (65+) in Comox Valley are obese, the highest rate of anywhere in the province. Obesity is a major health risk and considered by health professionals to be a “conveyor belt” to developing a chronic disease or dying prematurely. Obesity rates are likely to continue without the development of improved local and intra-regional active transportation networks.

Below average active transportation mode share: Although regional mode share rates have declined marginally since 2001, the percentage of people using cars (as driver) for their primary mode of work transportation remains above BC averages (79% versus 72%). The more rural Electoral Areas had the highest rates (84%), while the three municipalities ranged between 74.2% and 76%. Regionally, walking/biking mode share is roughly on par with provincial averages at 9.9%, and is highest in Courtenay at 14.3%, the densest community in region. Transit mode share is well below provincial averages (1.6% versus 10.3%), ranging between 0.9% and 2.7% in Comox, Courtenay and Cumberland.

Stagnant densities: The municipal boundaries of Cumberland and Courtenay have grown substantially since 1996 (75% in Cumberland and 42% in Courtenay), making longer term density trend analysis difficult. Still, taking into account the increased size of Cumberland and Courtenay, neither have become significantly denser communities over the past decade, and neither has Comox. Growth and development have occurred horizontally and the three town centres have remained virtually unchanged, although some newer mixed-use residential development has occurred in downtown Comox. Overall, Courtenay’s population density decreased 25% from 1,119 people per square kilometre in 1996, to 822 people per square kilometre in 2006. Cumberland’s population density decreased 75% from 343 people per square kilometre in 1996, to 95 people per square kilometre in 2006. Higher densities typically increase the number of potential destinations located within a geographic area, increase proximity between destinations, reduce travel distances, and increase the likelihood of walking or bicycling or transit.

Rising chronic disease rates: Chronic diseases, notably cardiovascular disease, chronic respiratory disease, diabetes, and cancer are all on the rise in the Local Health Area (which closely corresponds to Comox Valley’s boundaries). While the region’s larger than average senior population can account for some of the increase, the increases parallel those found across BC and Canada and could be related to increasing risk factors like the lack of physical inactivity and obesity.

Increasing wild fire risk: New development and growth pressure is pushing development further from both professional and volunteer fire services. Advanced fire suppression efforts in the last fifty years have also resulted in high levels of fuel loading in wildfire interface areas. From the standpoint of community fire protection, interface fires have the potential to develop into catastrophic wildfires of a scale and intensity beyond the range of historical variability, as has already been demonstrated in communities throughout BC (i.e., Okanagan).

Points for Discussion

When considering the public health and safety trends and issues identified in the previous section, the policy ideas below could be considered while formulating the Regional Growth Strategy.

Increase densities in the region's town centres and activity centres to support and encourage active transportation and more active lifestyles. Research clearly shows that walkable, bikable and wheelable communities are healthier, safer than more auto-dependent places. Creating such healthy built environments could be addressed through strategies like:

- Supporting the development and implementation of a settlement area to limit development to existing developed areas and to encourage infill development.
- Targeting infrastructure development and the location of public facilities to encourage urban redevelopment and infill.
- Increasing density in town centres to help make increased transit service more feasible.

Improve street network and greenways connectivity to, through and between town centres and activity centres to support and encourage active transportation and more active lifestyles. Street networks influence the specific route and mode of transportation that people use. As connectivity increases, travel distances decrease and route options increase, allowing more direct travel between destinations and encouraging more active transportation choices. Improving local, regional and intra-regional connections could be addressed through such strategies as:

- Supporting the CVRD's Regional Greenways Strategy initiative and ensure that municipal connections to the new greenway network are developed and linked to, through and between centres.

- Supporting the development and implementation of a settlement containment boundary to limit development to existing developed areas and to encourage infill development.
- Targeting infrastructure development and the location of public facilities to encourage urban redevelopment and infill.
- Developing consistent, region-wide street, sidewalk and intersection standards to reduce automobile traffic speeds, support alternative and active transportation modes, and to create more attractive, healthier built environments.
- Identifying regionally important, priority street connections and mandate that those connections be established as a condition of redevelopment.
- Supporting development of regional bicycle and pedestrian master plans integrated with local-level strategies to improve active transportation connections to, through and between regional centres and activity nodes.

Increase land use mix in regional town centres and activity centres to support and encourage active transportation and active living.

Land use mix is positively associated with physical activity because it shortens trip distances, encourages people to walk and/or bicycle, and makes recreational opportunities easier to access. Land use mix could be improved through such strategies as:

- Supporting a greater range of mixed use development in regional centres through greater mixing of uses and through the introduction of complementary land uses (e.g. residential uses in employment centres and conversely commercial uses in residential areas) in places which are currently single use in nature.
- Ensuring that local recreation opportunities are within close proximity of town centres and activity areas.

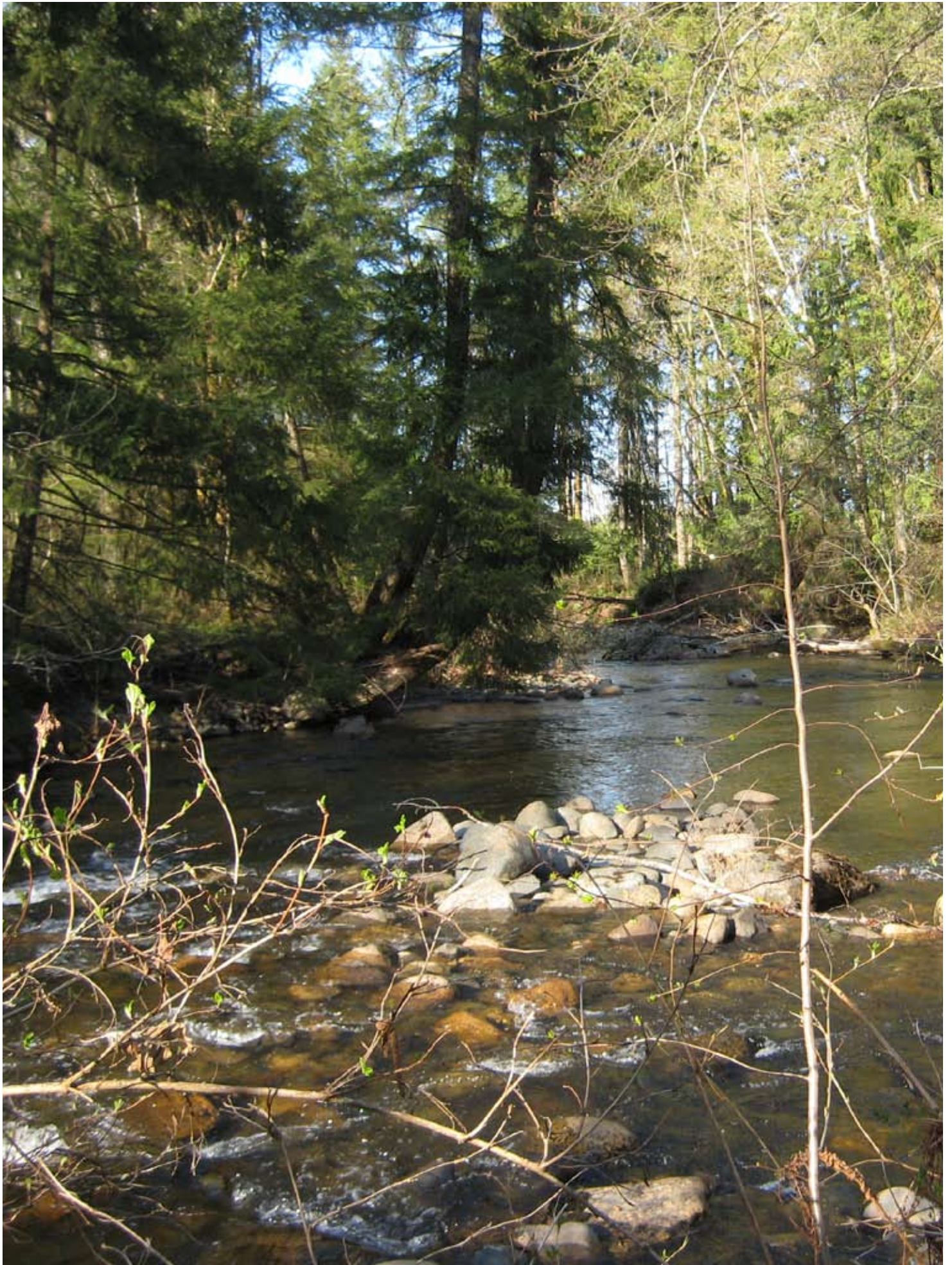
Create an enabling environment to support development of healthy built environments and to address land use – population health linkages.

Building awareness of the connections between resident health and the physical layout and design of our communities is critical to achieving healthier built environments and maintaining the region's high quality of life. Re-engaging health professionals in land use planning and educating the region's planning and development community on healthy built environments is of critical importance. Achieving this awareness and engagement could be addressed through such strategies as:

- Establishing a regional Healthy Built Environment Advisory Committee to provide a formal avenue for residents and regional health professionals to explore the potential health impacts of both policy and project initiatives.
- Supporting the CVRD's Regional Greenways Strategy initiative and ensure that municipal connections to the new greenway network are developed.
- Linking regional recreation providers and health professionals to promote and engage residents in indoor and outdoor physical activities and advocate for healthy change in the community.
- Supporting local governments to modify current planning practices to better count active transportation (for example, by improving analysis of non-motorized modes in travel surveys) and value its benefits (for example, by taking into account benefits such as roadway and parking cost savings, consumer cost savings and improved health).
- Prioritizing funding for transit and non-motorized improvements, including projects such as sidewalks, traffic calming, bike lanes, and better transit service or access.
- Adopting regionally consistent zoning, development cost charges, and development permit approval processes that support healthy objectives.
- Seeking out opportunities to enhance public health and safety in local building codes, such as applying Bill 10, the Housing Statutes Amendment Act (2008), which allows local governments to adopt and enforce Green Building standards that improve energy efficiency and thus reduce GHG emissions.

Improve fire safety in the region through the completion of interface fire hazard mapping to identify high-risk areas and the development of a Comox Valley Wildfire Protection Plan.

The CVRD and some member municipalities are currently working on interface fire hazard mapping. This important work needs to be completed for the whole region to ensure that the highest standards of public safety are achieved.



CHAPTER 9

Climate Change

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Policy Context

Role of the RGS in reducing GHG emissions

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Introduction

Combating climate change is one of the most critical issues being addressed by governments around the world. According to the 2007 United Nations Intergovernmental Panel on Climate Change (IPCC),¹ human impacts over the last 30 years have raised average global temperatures, influenced extreme weather events and altered many physical and biological systems. Minimizing the negative effects of climate change is now believed to require between 50% and 85% reductions in Greenhouse Gas (GHG) emissions from 2000 levels by 2050. Despite substantial challenges, significant offsets and reductions in GHG emissions can still be achieved.²

Greenhouse Gases

Greenhouse gases include: carbon dioxide (CO₂), nitrous oxide (N₂O) and methane (CH₄), expressed as a CO₂ equivalent (CO₂e).⁴ Typically GHGs are generated from the use of fossil fuels to light, heat, cool and ventilate buildings (including homes and offices) and to power municipal operations, vehicles and industrial processes; and the decomposition of organic waste in landfills.

In British Columbia, GHG emission reductions are being addressed through Provincial legislation and policies such as the Climate Action Plan (2008), the Carbon Tax Act (2008), the Greenhouse Gas Reduction Targets Act (2007) and specific to the RGS process, Bill 27, The Local Government (Green Communities) Statutes Amendment Act (2008).³ These policies outline specific GHG reduction targets and set target dates to achieve those goals. However, in order to achieve GHG emissions reductions, the Province, regions and municipalities need to work together and collaboratively take action.

As the Comox Valley RGS is prepared, it must identify what the local governments can do to reduce GHG emissions and preserve the quality of life and environmental health of the Comox Valley. This chapter provides an overview of climate-change legislation, a review of local initiatives, and details potential strategies to achieve reductions in GHG emissions.

Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change (IPCC), established by the United Nations Environment Program and the World Meteorological Association, is generally recognized as the most scientifically-credible and objective group assessing climate change risks, potential impacts, and mitigation and adaptation strategies. In 2007, the IPCC published its fourth assessment on climate change findings, entitled *Climate Change 2007*. The report concludes that:

- There is scientific consensus that average temperatures around the globe are increasing (as compared with historical data from the previous three centuries);
- These changes are largely caused by a “heat-trapping” effect resulting from increasing concentrations of GHGs; and,
- The primary source of these increases in emissions causing climate change is human activities.

Greenhouse Gas Legislation, Charters and Plans

B.C. Climate Action Charter (2007):

the Province introduced the B.C. Climate Action Charter to work collaboratively with signatory local governments and the Union of British Columbian Municipalities (UBCM) to positively affect climate change.

Bill 27, The Local Government (Green Communities) Statutes Amendment Act (2008):

mandates all local governments to incorporate targets to reduce GHG emissions and to create policies and actions to achieve those targets into their official community plans and regional growth strategies

Climate Action Plan (2008):

outlines strategies and initiatives to take B.C. approximately 73 per cent towards meeting the goal of reducing greenhouse gas emissions by 33 per cent by 2020. It also provides information on the many ways British Columbians can reduce energy consumption and save money while reducing their greenhouse gas emissions.

Bill 37, Carbon Tax Act (2008):

would impose a broadly-based carbon tax on the purchase and use of fossil fuels in British Columbia, such as gasoline, diesel, natural gas, heating fuel, propane and coal.

Bill 44, the GHG Reduction Targets Act (2008):

requires public sector organizations to begin pursuing actions in 2008 in order to reduce GHG emissions and become carbon neutral in their GHG emissions generally by 2010.

Bill 10, the Housing Statutes Amendment Act (2008):

augments jurisdiction for buildings by allowing local governments to enact bylaws regulating buildings for the purposes of addressing energy and water efficiency, and for reducing GHG emissions.

Policy Context

In February 2007, the Province of British Columbia acknowledged the “critical problem of global warming and climate change.”⁵ In its Speech from the Throne, the Province committed to a 33 percent reduction in GHG emissions from 2007 levels by 2020. This 2020 emission goal is presently the highest standard set by any North American jurisdiction.⁶ Since this commitment, the Province has set additional GHG reduction targets of 6 percent below 2007 levels by 2012 and 18 percent by 2016, as recommended by the Climate Action Team (CAT).⁷

In order to reach the GHG emission reduction targets, the Province has announced further legislation that requires that action be taken locally. In September 2007, the Province introduced the B.C. Climate Action Charter to work collaboratively with signatory local governments and the UBCM to positively affect climate change. To date, 174 local and regional governments across the Province - including the Comox Valley Regional District, the City of Courtenay⁸ and the Town of Comox⁹ - have signed the B.C. Climate Action Charter and have committed to developing strategies and taking action towards achieving the following goals:

- being carbon neutral in respect of local government operations by 2012 (not including solid waste facilities);
- measuring and reporting on the community’s GHG emissions profile; and,
- creating complete, compact, more energy efficient rural and urban communities (e.g. foster a built environment that supports a reduction in car dependency and energy use, establish policies and processes that support fast tracking of green development projects, adopt zoning practices that encourage land use patterns that increase density and reduce sprawl).¹⁰

Local governments that sign the Climate Action Charter and commit to becoming carbon-neutral in their operations by 2012 are eligible to participate in the Climate Action Revenue Incentive Program. By implementing a plan and publicly reporting on their progress in meeting GHG reductions, local governments will be eligible to receive a grant equal to 100 per cent of their carbon tax costs, without adding any burden to the property tax.

Most important to the Regional Growth Strategy is the newly enacted Bill 27, The Local Government (Green Communities) Statutes Amendment Act that was passed on May 29, 2008. Bill 27 mandates all local governments to incorporate targets to reduce GHG emissions and to create policies and actions to achieve those targets into their official community plans and Regional Growth Strategies (transitional provisions give local governments until May 31, 2010 to comply in relation to OCPs, and May 31, 2011 in relation to Regional Growth Strategies).¹¹

The Province also passed additional legislation to support the goal of reducing GHG emissions, including Bill 10, the Housing Statutes Amendment Act, and Bill 44, the GHG Reduction Targets Act. Bill 10 enables local governments to adopt and enforce green and energy efficient building standards, which help reduce GHG emissions. Complementary yet different to Bill 27, Bill 44 requires public sector organizations to begin pursuing actions in 2008 in order to reduce GHG emissions and become carbon neutral by 2010.

Climate change impacts in British Columbia

- Many regions of British Columbia will experience increasing water shortages and increasing competition among water use (for example, hydroelectricity, irrigation, recreation and in-stream flow needs).
- Extreme weather and related natural hazards have impacted, and will continue to impact, critical infrastructure, affecting communities, industries and the environment.
- British Columbia's forests, forest industry and forest-dependent communities are particularly vulnerable to climate-related risks, including pest infestations and fire.
 - Climate change will continue to exacerbate existing stresses on British Columbia's fisheries. The vulnerability of Pacific salmon fisheries is heightened by the unique social, economic and ecological significance of these species.
 - British Columbia's agricultural sector is facing both positive and negative impacts from climate change, with more frequent and sustained drought being the greatest risk.¹²

The CVRD has committed to significantly reduce its GHG emissions and has taken several steps to begin this process. In 2006, the CVRD became a member of the Federation of Canadian Municipalities (FCM) Partners for Climate Protection (PCP) program. The FCM has developed the PCP Program in partnership with ICLEI - Local Governments for Sustainability¹³ to guide a network of local governments, including 55 in British Columbia, 168 across Canada, and over 800 internationally, that have committed to reducing GHG emissions. The FCM PCP program requires local government partners to undertake work within a five-milestone framework:

1. create a GHG emissions inventory and forecast;
2. set an emissions reductions target;
3. develop a local action plan;
4. implement the local action plan or a set of activities; and,
5. monitor progress and report results.¹⁴

According to the Province of British Columbia, municipalities may have control over as much as 43% of the total GHG emissions.¹⁵

Tackling Climate Change

The Comox Valley RGS has an important role to play, both in helping to mitigate climate change impacts and in improving the region's adaptive capacity to responding to these changes. This role includes creating a clear direction on where growth and development will occur, while encouraging a more compact settlement pattern, sustainable transportation options, and protection of natural areas. All this could be achieved while also supporting the economic competitiveness of the region.

Success depends on timely and aggressive action to reduce GHG emissions on the part of all levels of government, as well as every business, institution and citizen in the Comox Valley. In order to coordinate this effort, it is critical to establish regionally appropriate, realistic and effective GHG reduction targets and to create a consistent process for measuring, monitoring and reporting actions to meet that target. Since the RGS is a strategy document that is collectively endorsed by all local governments in the Comox Valley, it is an ideal place to achieve both. Creating GHG emission targets also fulfills new obligations set by the Provincial government, and acknowledges that achieving GHG reductions raises complex, cross-jurisdictional issues that will require the sharing of information, resources and ideas.

Tracking Climate Change

There is a Provincial mandate to include GHG emission targets in its RGS. However before a GHG emission target is determined, three important pieces of information are required:

- a baseline level of emissions for a point in time;
- a trend that indicates the changes in the quantity of emissions over time; and,
- a forecast for future emissions based on that trend.

A baseline level of emissions indicates the total GHG emissions for a given year and provides local governments with a point in time in which to compare all future GHG emission levels.¹⁶ A trend shows the change in emission levels between periods of time. Essentially a trend is established by collecting and analyzing GHG emissions for a given year or years and that data is compared to the baseline emission data, which then shows the increase or decrease in emissions levels. Finally, a forecast shows the future projection of GHG emission levels if existing patterns of development and population growth continue without change.

2007 Community Energy and Emissions Inventory (CEEI reports)

Since the majority of local governments do not have the resources or the expertise to get started, in spring 2009, British Columbia's Ministry of Environment released community emission inventories which track emissions for each of the 185 local governments within the Province. A community-wide inventory of energy use and GHG emissions is a collection of data that quantifies the amount of energy consumed and solid waste generated by a municipality and regional district. The community inventory records data from the institutional, commercial, industrial (ICI), transportation, and residential waste sectors. The preliminary inventories include data on: energy use, including electricity and fossil fuels; transportation practices, such as vehicle kilometres traveled, fleet composition and the types of fuel consumed; and waste composition, volume

and disposal methods.

The draft CEEI reports review four sectors and capture the type and amount of energy consumed and/or greenhouse gases (CO₂e) released into the atmosphere, as discussed on the following page and summarized in Figure 1: Community Energy and Emissions Inventory Sectors. The standardized approach to inventorying provided by the CEEI is beneficial in that it ensures the Province and all local governments are working within the same parameters to provide an accurate, overall picture of GHG emissions and energy usage in the effort to achieve climate change related goals.¹⁷

The four CEEI sectors are:

1. Buildings: The building sector is divided into residential, commercial and industrial buildings. Each category includes the number of connections, the amount of actual energy consumed (e.g., electricity [kWh] and natural gas [GJ], and the resulting CO₂e totals for each building category as well as CO₂e subtotal for the sector;

2. On-road transportation: The on-line transportation sector is subcategorized into several passenger and commercial vehicle classes. Each subcategory includes an estimate of the amount of fuel used (e.g. gasoline, diesel fuel, and mobile propane), and the resulting CO₂e subtotal for each vehicle class as well as a CO₂e subtotal for the sector;

3. Solid waste: The solid waste sector states the estimated mass of waste deposited by local governments at community and/or regional landfill(s), with the associated CO₂e (methane) net of any known landfill gas flaring, capturing, etc.; and,

4. Land-use change: The land-use change (deforestation) sector includes the estimated amount of CO₂e from the loss of forests for urban development and agriculture. This data is only provided at the regional district level and as information only (e.g., the data does not form part of the total emissions profile reported).

Community Energy and Emissions Inventory Sectors

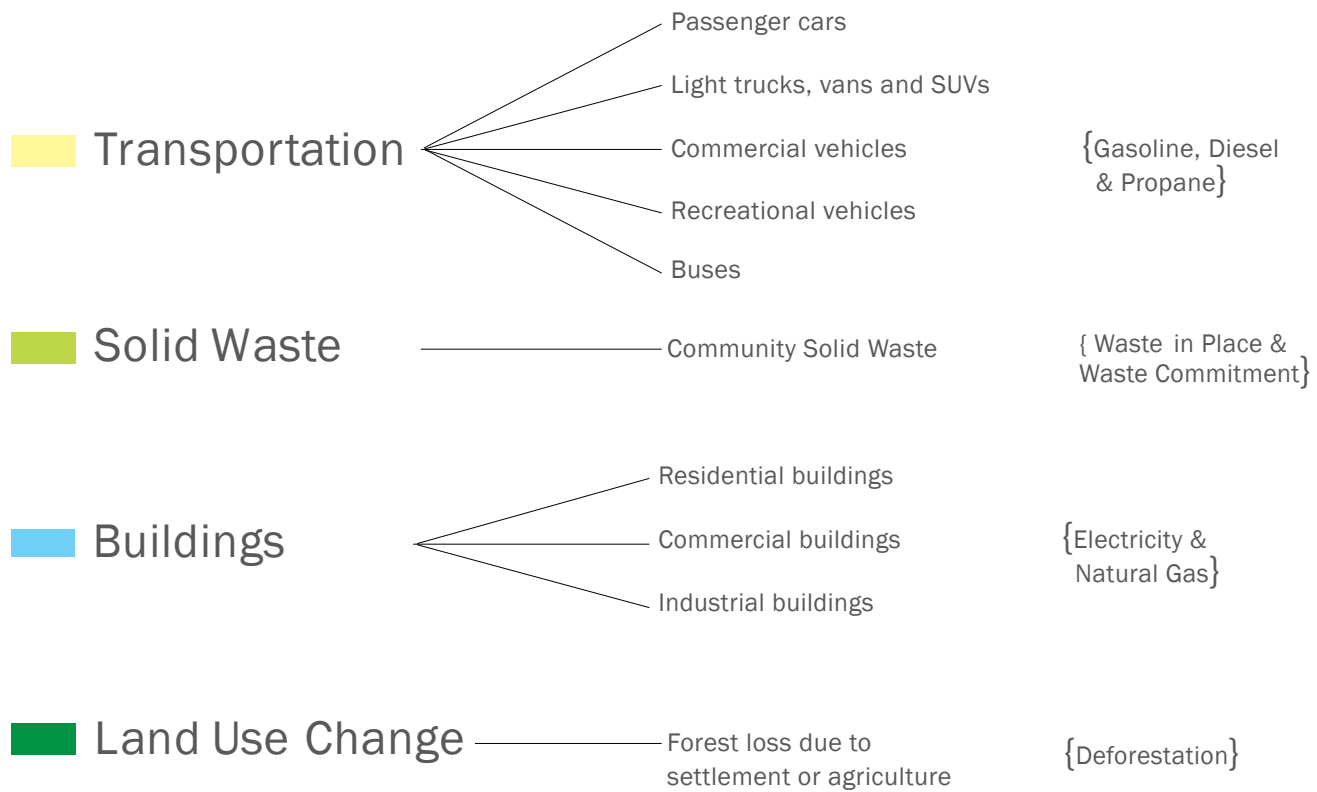


Figure 9.1

GHG Emissions in the Comox Valley

As illustrated in Figure 9.2, on-road transportation accounts for more than half of the GHG emissions in the Comox Valley, according to the CEEI 2007 data. In addition, personal vehicle use is responsible for approximately 80 percent of transportation related emissions. Specifically, two-thirds of that total is attributed to light trucks, vans and SUVs. It is clear from this data that significant GHG emissions could be achieved through increased use of public transit and through a shift towards smaller and more fuel efficient vehicles.

Community Energy Emission Inventory, 2007 Data for the Comox Valley

Sector	Total CO ₂ e (t)	Percentage
Transportation	199,311	55.1%
Solid Waste	61,605	17%
Buildings	33,662	9.3%
Land Use	67,304	18.6%

Figure 9.2

Community Energy Emission Inventory, 2007 Data for the Comox Valley

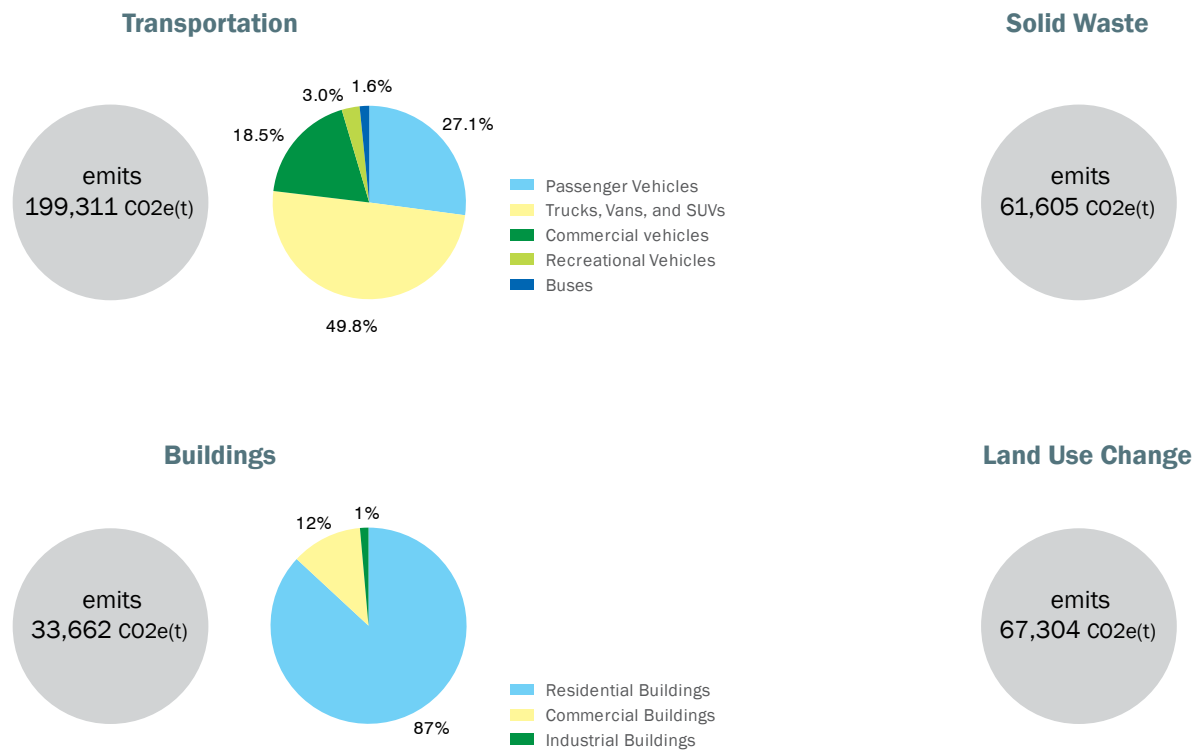


Figure 9.3

Transportation data source: ICBC and Natural Resources Canada;
 Solid Waste data source: Golder Associates, SWMPs, RCBC
 reports, and others; Buildings data source: BC Hydro, Terasen,
 FortisBC and Pacific Northern Gas; Land Use Change Data source:
 Satellite and aerial images

Comparison of GHG Emissions in the Comox Valley

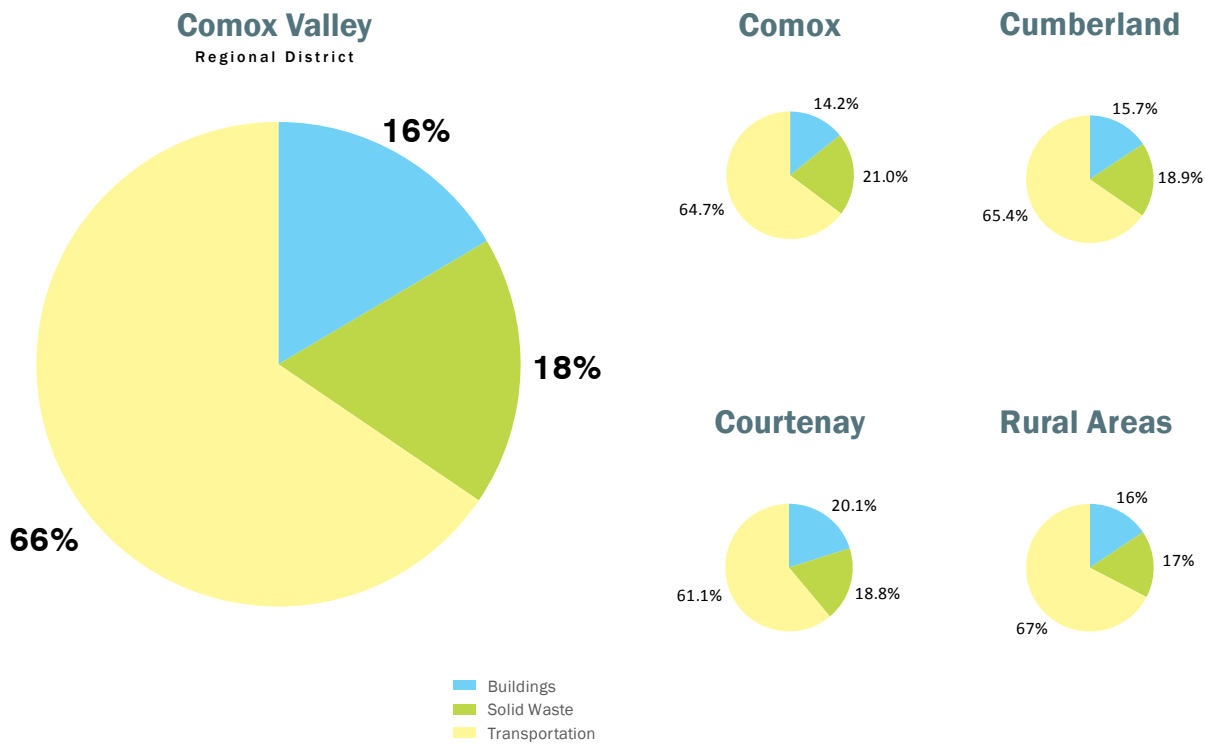


Figure 9.4

Figure 9.4: Comparison of GHG Emissions in the Comox Valley compares GHG emission levels within the three municipalities and electoral areas. The findings show that there is virtually no difference in GHG emissions between urban and rural areas. While transportation related emissions are slightly higher in rural areas, the difference is quite minor and the general observation is that both rural and urban residents in the Valley appear to have the same impact on GHG emissions.

GHG emissions in the Comox Valley and comparable regional districts, 2007 CEEI data

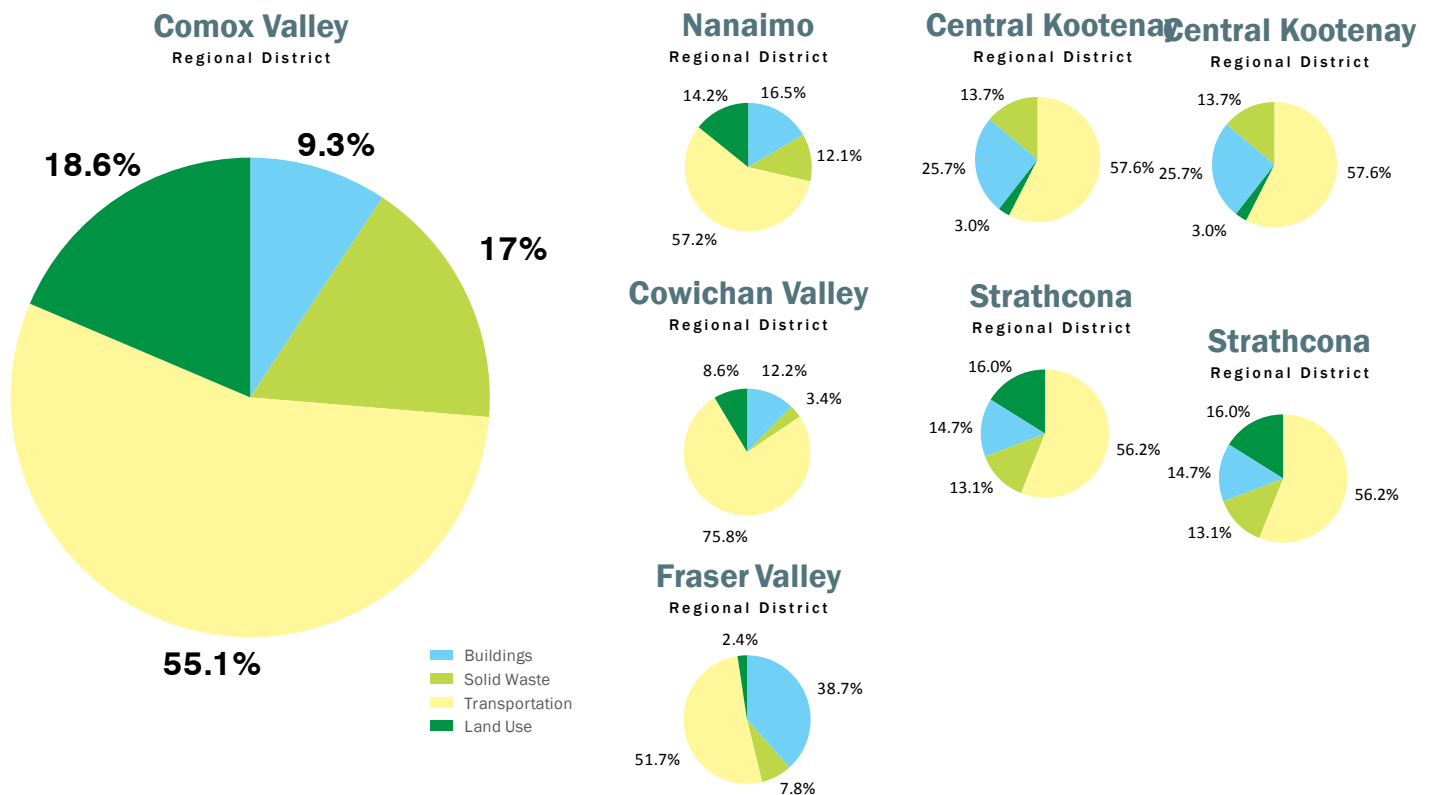


Figure 9.5

The following observations can be drawn when comparing the Comox Valley to other nearby regional districts, as illustrated in Figures 9.4 and 9.5 on the following pages:

- Transportation related emissions for the Comox Valley fall within the mid-range in comparison to other regions;
- The percentage of emissions related to buildings is significantly lower in the Comox Valley compared to other regions;
- The percentage of emissions related to solid waste is high in comparison to other regions; and,
- The percentage of emissions related to land use change (i.e., forest area converted to either a settlement area or agricultural use) is very high in comparison to other regions.

The indication from these observations is that while the Comox Valley needs to work towards promoting better public transit, improving building efficiencies and diverting solid waste from landfills, the conversion of forested lands to settlement areas is the most significant challenge in terms of GHG reductions. Continued growth and development pressures could result in significant increases in carbon emissions unless such growth is directed to appropriate locations.

GHG emissions in the Comox Valley compared to Metro Vancouver and Capital Regional District, 2007 CEEI data

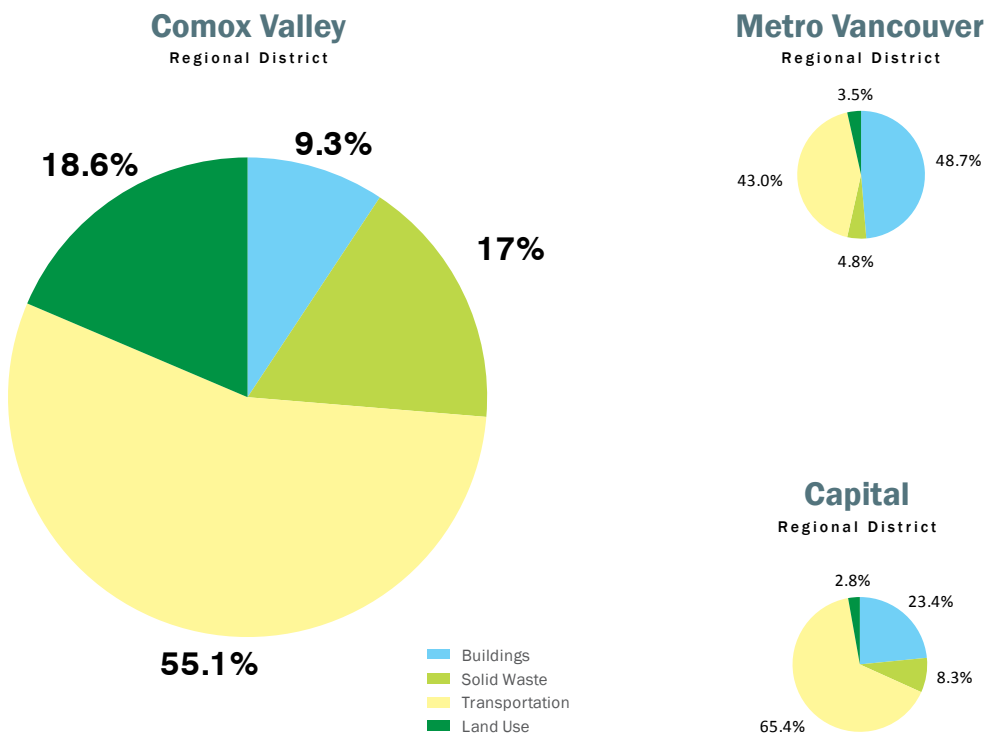


Figure 9.6

Local GHG Reduction Initiatives

- CVRD, City of Courtenay, and the Town of Comox have signed the Climate Action Charter in 2007;
- The CVRD has initiated a Sustainability Strategy;
- City of Courtenay completed a Corporate Energy and GHG Emissions Inventory in October 2008;
- On February 16, 2009, the Courtenay City Council approved the adoption of a Corporate Climate Action Strategy. This strategy proposes numerous actions that will lead to reduced energy consumption and emissions associated with municipal operations. The highest priorities will be to reduce energy consumption in the City's major facilities, as well as to reduce fuel consumed by the city fleet. In addition, the City of Courtenay has set clear GHG emission reduction targets;
- City of Courtenay and the Town of Comox created a Sustainability Checklist encouraging developers to incorporate more environmentally and socially sustainable practices in development;
- Village of Cumberland is a member of Idle Free BC, an idling reduction initiative hosted by the BC Climate Exchange; and,
- Village of Cumberland initiated a Universal Water Metering Program.

In 2008, the CVRD developed and adopted a CVRD Climate Change Toolkit. The fundamental reason for developing the toolkit is to begin to formulate a strategy for how the CVRD will tackle climate change. The toolkit provides guidance to municipal staff on strategies to reduce GHG emissions on projects already undertaken internally and externally. The policies and practices within the toolkit are the outcome of an analysis of various local government GHG emission reduction initiatives to find those that are most suitable for the Comox Valley.

The toolkit provides a summary of each of the four key areas (land use, building, civic operations and operational services) in the context of climate change, followed by a list of policies and practices and an inventory of organizations that provide funding and resources in order to implement the policies and practices presented.¹⁸

Points for Discussion

The Province of British Columbia has committed to a 33% reduction in GHG emissions from 2007 levels by 2020. The Provincial strategy to address climate change will be targeted on two main fronts- mitigation and adaptation. Mitigation is reducing GHG emissions and enhancing carbon sinks (e.g., forests, soils and ocean) that remove carbon dioxide and other GHGs from the atmosphere. This is expected to slow the rate and extent of climate change. Adaptation is responding to the anticipated impacts resulting from unavoidable warming due to past emissions, and anticipating and increasing our resilience and capacity to withstand and deal with future impacts.¹⁹

Decisions on growth, land use, infrastructure, transportation and building form have immense impacts on the energy consumption, energy source opportunities and GHG emissions in communities.²⁰ Regional Growth Strategies provide a regulatory mechanism to begin to address climate change.

In particular, there are four important reasons to include GHG reduction targets in a Regional Growth Strategy:

1. The Province of British Columbia has passed legislation requiring Regional Districts to include greenhouse gas reduction targets in regional growth strategies by May 31, 2011. The CVRD will be the first new RGS to set GHG emission targets under the new Provincial legislation.
2. Regional Growth Strategies operate on a time scale that easily allows regions to align overall goals and objectives with GHG reduction targets. By contemplating a twenty-year horizon, the RGS becomes a standardized process for ongoing measuring, monitoring and reporting on GHG emissions. The RGS covers a significant period of time in which land use decisions can be tracked alongside emissions targets. A twenty-year timeframe also ensures a long-term regional commitment to address climate change, yet one that is more comprehensible than typical 40 to 50 year targets that are being established at broader national and global scales.
3. Incorporating GHG reduction targets into the RGS ensures that there is a formal commitment from all member municipalities in the pursuit of regional GHG emissions reductions. Since the success of any RGS is grounded in collaboration and cooperation amongst local governments, having GHG reduction targets in a RGS establishes a formal commitment to work together to address climate change. Although local governments are also provincially mandated to include GHG emission reduction targets in their official community plans, a RGS sets land use and growth direction for the entire regional area, establishing coherency between all of the municipalities.
4. There is a direct connection between land-use and development policies expressed in a RGS and the levels of GHG emissions. Since GHG emissions are directly connected to land development decisions, a RGS that establishes a framework for how regions will accommodate growth and development is an appropriate place to start reducing GHG emissions. A RGS sets out regional policies that influence urban form, the transportation system and corridors, and the protection of regional natural areas and assets, all of which impact where people live, how people commute and what is conserved. These decisions drastically affect the amount of GHG emissions that are emitted in the region.

Below are a set of potential policy ideas that could be considered when formulating the Regional Growth Strategy.

Set a GHG specific emission reduction target

Once there is a standardized process for monitoring, measuring and reporting emissions in place, the CVRD needs to set a realistic target based on an assessment of reductions that can likely be achieved. The CEEI 2007 report provides an excellent starting point to quantify the amount of energy consumed and solid waste generated by the region. By using 2007 inventory data for the baseline year, the Comox Valley can set short and long-term targets.

Promote active transportation options

The provincial government identifies transportation as a leading cause of greenhouse gases in the province, accounting for approximately 40% of total emissions.²¹ In the Comox Valley, on-road transportation accounts for approximately 65% of the region's total GHG emissions. As the region continues to grow, it is important to make transportation "greener," and provide alternatives to using single-occupant vehicles. This could be addressed through such strategies as:

- improving public transit within the Comox Valley and setting targets for both increased ridership and increased transit modal share;
- promoting and supporting active transportation choices such as cycling and walking;
- establishing a transit-supportive regional land-use pattern;
- creating a sustainable transportation checklist whereby the review of alternative transportation options is integrated into the review of projects; and,
- promoting a region-wide idle free campaign.

Encourage compact urban form

The Comox Valley urban form is the physical layout and design of the region, including density, neighbourhood design, land use mix, and transportation system (infrastructure and service levels). The relationship between each of the components of the urban form has significant implications to overall GHG emissions. An RGS can create opportunities that will encourage efficient and integrated land use decisions. For example, the following policies could be introduced:

- introduce development permit area guidelines that establish objectives to promote energy conservation, water conservation, and reduce greenhouse gases. This could mean requiring development applicants to create an emission reduction strategy as part of their development approvals process;²² and,
- create a settlement containment boundary where new growth and development will be focused and directed to mostly built-up areas that have already established transportation and servicing infrastructure.²³

Promote green buildings and renewable energy

In the Comox Valley, residential, commercial and industrial buildings account for approximately 17% of the total GHG emissions (excluding land use change sector data). Today, there are significant advances in green building and renewable energy initiatives. The RGS could introduce the following strategies:

- encourage local governments to allocate space for, and promote community energy facilities, such as district energy facilities, that utilize clean energy sources as part of the neighbourhood design;
- offer incentives/rebates for incorporating green technology into future development projects, such as property tax rebates;

- create green building standards/guidelines that will encourage or require that new buildings incorporate green building design, such as a regional green building checklist that accounts for different types of building contexts - urban, suburban, rural;
- promote greening projects throughout the region, such as rain gardens, tree planting, green corridors; and,
- produce a region-wide energy plan that considers renewable energy options.

Protect natural areas

An RGS can help mitigate and adapt to climate change impacts through the protection of natural areas and environmentally significant resources. Natural areas, such as watersheds, wildlife corridors and forests, provide a range of ecological benefits and are ultimately dependent on land management policies and practices. These natural areas not only sequester carbon but they protect the unique biodiversity within the region. In order to protect these areas, the following policies could be introduced:

- develop a regional conservation strategy that protects, conserves and enhances the region's natural assets;
- continue inventorying and mapping natural areas; and,
- establish buffers around areas with environmentally valuable resources.

Reduce solid waste

Solid waste accounts for approximately 18% of the Comox Valley's total GHG emissions (excluding land use change sector data).

There is a need to reduce the amount of waste being generated and the amount going to the landfill. The following strategies could be introduced to achieve these goals:

- develop a communication strategy to educate citizens on ways to reduce waste;
- promote the organic waste/composting program;
- expand the recycling program and introduce composting; and
- provide incentives to reduce construction waste and encourage a life-cycle approach to building design.



Conclusion

The Comox Valley is facing a number of challenges as it looks to manage growth and land use activities over the next twenty years. This paper has provided an overview of the major trends and issues facing the Comox Valley and raises a number of questions and ideas as discussion points to be considered for public input prior to the preparation of a draft Regional Growth Strategy.

The purpose of this concluding chapter is to summarize some of the main ideas found throughout the paper and to put forward a set of approaches to managing growth that need to be considered through public review over the coming months.

The trends and issues identified in this paper require action on a number of fronts

An increase in population will create a demand for more housing and require choices to be made on where and how to best direct settlement areas. We need to ensure that choices made today will result in a land-use pattern that can be maintained into the future in terms of economic costs, servicing needs and environmental impacts.



An aging demographic will create an increased demand on seniors' services and appropriate seniors living environments. Choices made today should ensure that the increasing elderly population has access to health care services, recreational opportunities and day-to-day shopping needs. The RGS should ensure that mobility choices are optimized through land-use patterns and the provision of balanced transportation options, including walking and transit.



Current proposals for new housing developments must be reconciled with a realistic supply and demand for the Comox Valley and should ensure a diversity of housing choices is maintained. It appears that current proposals for residential development exceed the projected housing demand for 2031. This supply and demand need to be better understood in order to ensure that these developments provide an appropriate mix of housing choices in terms of form, tenure and affordability.



Strategies to further diversify the local economy and help support ongoing job creation are required. The current ratio of 0.5 jobs per resident in the Comox Valley is below the 0.6-0.9 ratio that is typical of more "complete" communities. With stable core employers like CFB Comox, St. Joseph's Hospital and Mount Washington, a strong agriculture, forest and aquaculture resource base, a good supply of industrial land and excellent transportation connections, including

the Comox Valley airport, the region is well positioned to becoming a more complete community. Economic development strategies that build on these local strengths and potentially target new areas (e.g., increased industrial activities, post-secondary education) should be supported through the RGS.



There is a need for more value-added economic activity locally. Creating new jobs and keeping money circulating in the local economy could be supported through an increased emphasis on value-added agriculture, aquaculture and forestry. A similar focus on local retailers and local industrial activity should be explored.



Working together to create a strong economic environment that both attracts new businesses and retains existing ones is of critical importance. Internal competition between local governments or businesses agencies (intentional or not) will only weaken the region's collective attractiveness and performance. The RGS should provide a platform for regional economic development stakeholders, including K'omoks First nation to collaborate and cooperate on local and regional economic development, research, planning and programming by creating a regionally consistent development and business permitting standards.



Transportation investments must focus on significant public transit improvements and enhanced pedestrian and cycling infrastructure. While the private automobile will remain the primary means for moving around, the Valley is still performing below average in terms of transit modal share in comparison to other similar regions in British Columbia. The current transit modal share of less than 1% must be increased significantly if the Comox Valley is to achieve a sustainable future and make meaningful reductions in Greenhouse Gas Emissions. Achieving such an increase will require that improvements are made to current service levels and that land-use patterns support transit use.

Agriculture and aquaculture are significant features of the Comox Valley economy, landscape and culture. Both, however, are susceptible to the pressure from growth and urban development. Competition for land and water creates a significant impact on farmers. Outside the ALR there is significant pressure to convert remaining farmland to settlement areas. Within the ALR, issues of lot size, access to water and incompatible uses at the edges need to be addressed. The shellfish industry has its own unique issues, mostly related to the quality of water and impact on marine life, resulting from increased urbanization in the region.



A sustainable region requires a sustainable and secure local food supply. In addition to preserving agricultural lands, efforts must be made to ensure that farming and aquaculture remain viable local activities and that an appropriate local food distribution network exists in order to make this food available locally.



A conservation strategy that protects the regional watersheds and other ecosystem features needs to be part of the Regional Growth Strategy. The corollary to smart growth is smart conservation: in determining where to direct land use change, we need to understand where to protect and preserve those ecological features that are critical to the health, diversity and future of our bioregion. Building on the significant work done to date on the identification and mapping of ecological features in the Comox Valley, the RGS will need to consider and implement appropriate policies, regulations or measures for land-use activities within those identified areas.



Regional growth must be matched with appropriate regional infrastructure. A sustainable region requires sustainable approaches (environmentally and economically) to the provision of drinking water and the disposal of sewage and solid waste. While separate strategies are being developed for these systems, ongoing coordination with the Regional Growth Strategy is important to ensure consistent decisions are made and that infrastructure investments reflect a sustainable land-use pattern.

Ensuring a sustainable and safe water supply for residential, agricultural and ecological purposes is one of the most critical issues currently facing the Comox Valley. Projections for growth will place a greater demand on the existing water supply. Meeting that demand should not be achieved by continual extraction of more water from the Valley's lakes and groundwater supplies. There should also be concerted efforts at conservation and re-use.

In coordination with the Regional Water Strategy, the RGS will need to understand the issue of water capacity and water conservation, and develop a land-use pattern that places that minimizes the economic and environmental costs of water extraction.



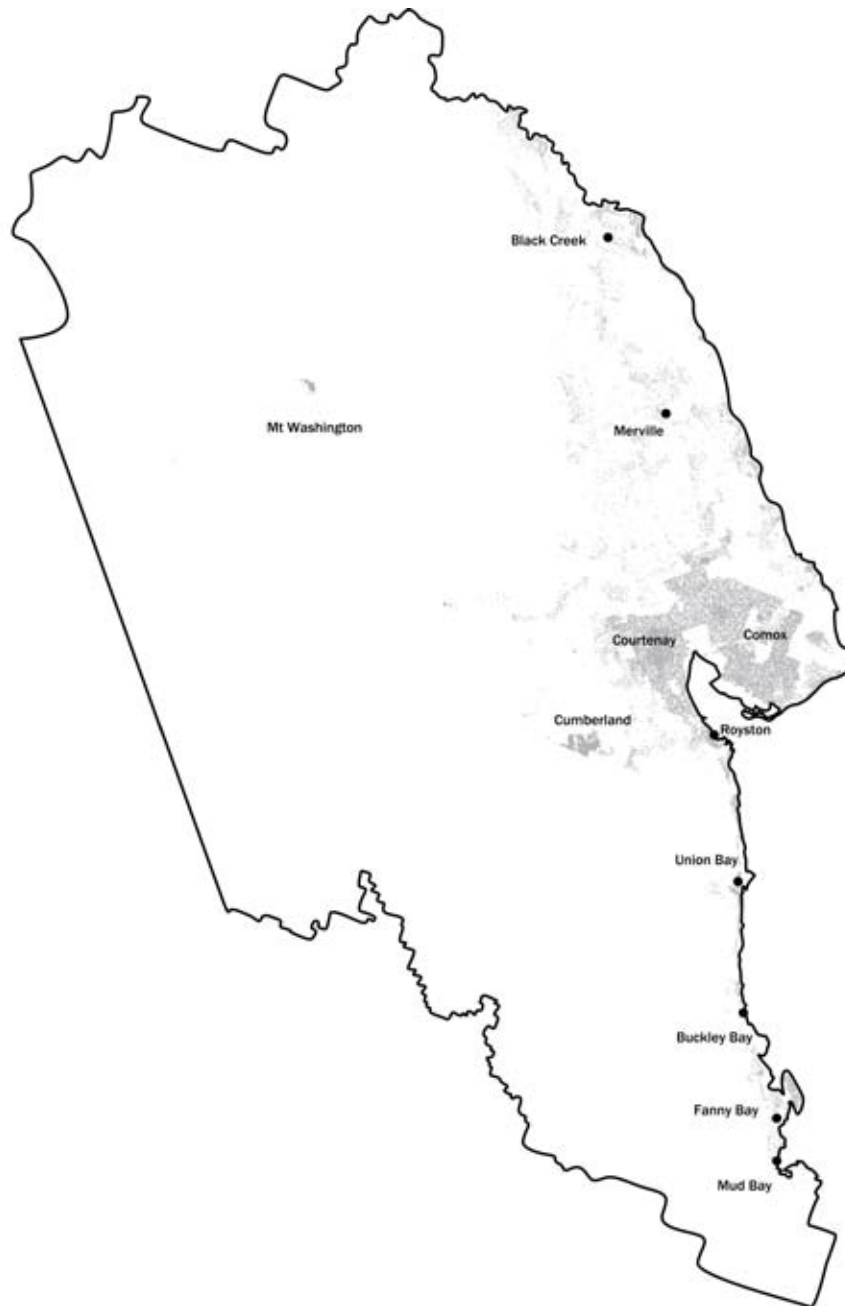
Land use patterns and activities have a variety of impacts on public health and safety – ranging from decreased levels of physical activity and higher incidences of obesity, limited means of accessing health care and emergency services, and drinking water contamination. While the RGS must consider all these impacts, primary consideration should perhaps be given to active transportation strategies (i.e., walking and cycling) that will facilitate more active lifestyles and improve the long-term health of people in the Comox Valley. Location of new health care facilities and access to emergency services will also need to be considered within the RGS.



The Comox Valley local governments are committed to addressing climate change through reductions in greenhouse gas emissions. Strategies for greenhouse gas emission reductions are a Provincial requirement within the RGS and an important objective of sustainable growth management. Working with the BC government's baseline inventory of community energy use and emissions, a clearer picture of the local impacts on GHG emissions in the Comox Valley is evolving. Within this understanding, the RGS will need to establish policies to guide reductions in GHG emission through initiatives such as reducing conversion of land to settlement areas, reducing the number of trips by single-occupant vehicles, diverting solid waste from landfills, establishing green building standards and promoting clean and renewable energy sources.

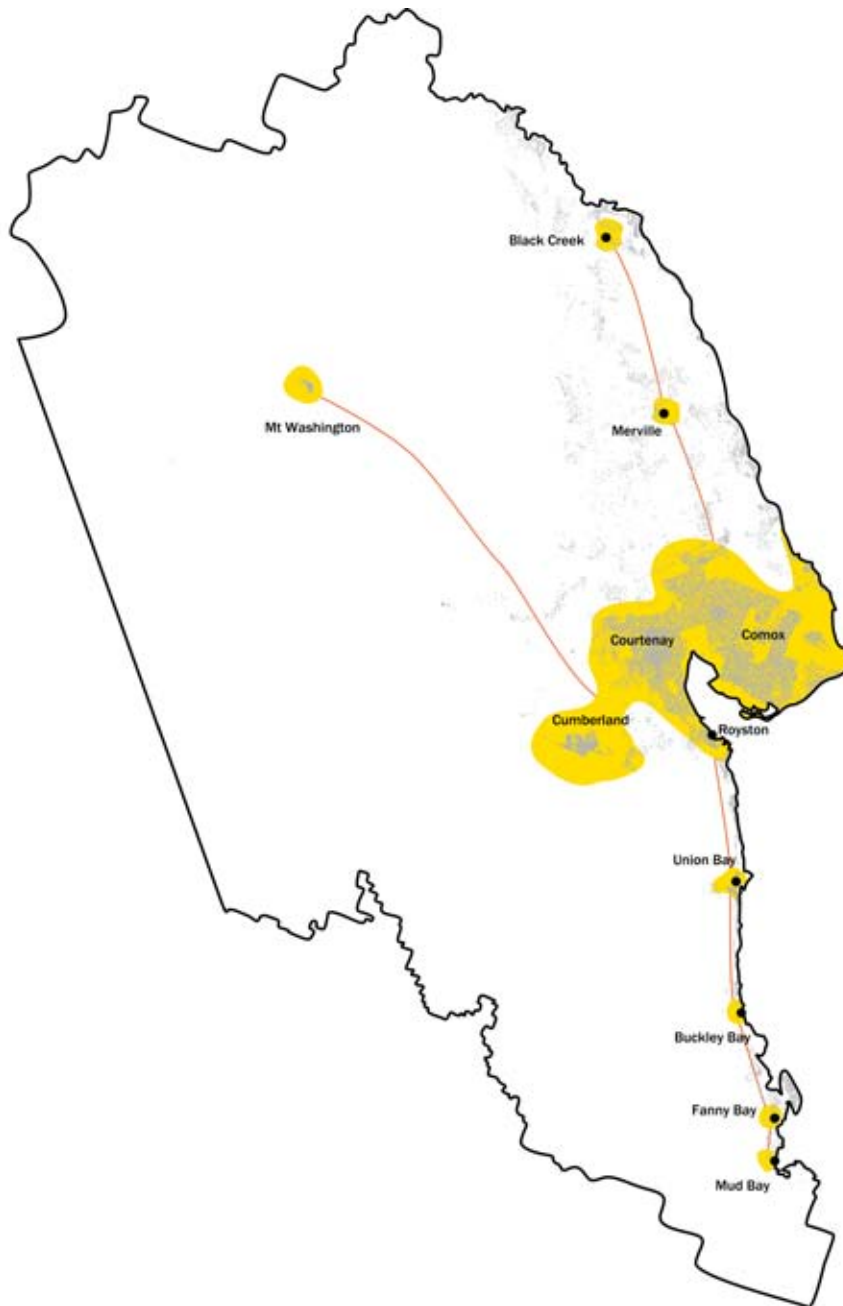
This paper has expanded on each of these challenges and articulated a set of ideas for public discussion and debate. The intent is to engage citizens in a dialogue about how best to address each issue and identify which ideas are most relevant and effective for the Comox Valley. The issues and ideas have been combined into one Comprehensive Background Paper because they are inter-related and are best understood and explored as a set of connected ideas.

In addition to understanding how each issue relates to the others, it is also important to understand how each issue impacts, and is impacted by, alternative growth scenarios, as the final RGS will need to include a plan for directing growth. To that end, a series of four approaches to growth are posited here in order to provide a visual context of how the Comox Valley could potentially grow and within which to consider the various policy ideas put forward in this paper, or additional policy ideas that will evolve in the course of the public discussion.



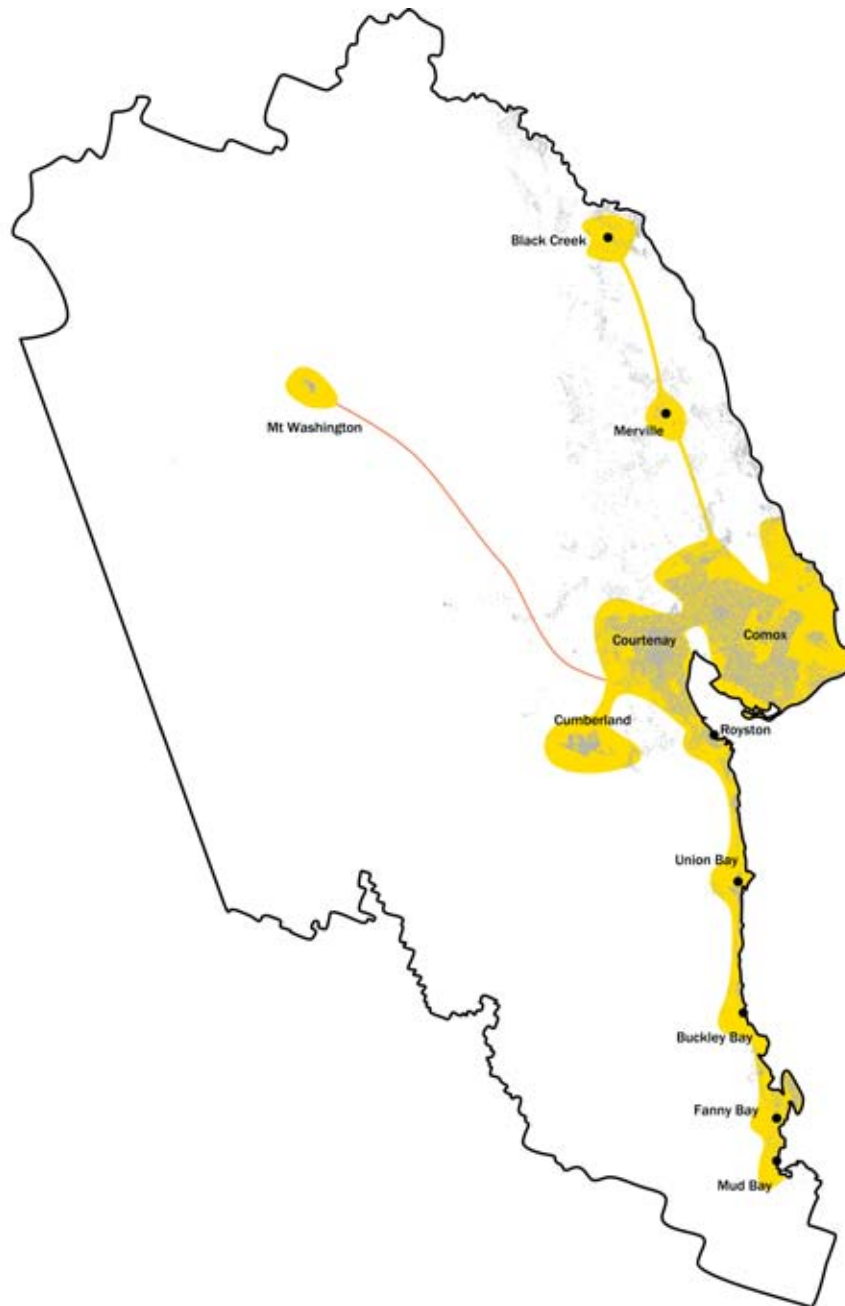
Existing Settlement Pattern

The existing settlement pattern in the Comox Valley is fairly compact. Population and housing are concentrated around the Courtenay-Comox urban centre and, to a lesser extent, the village of Cumberland. Ignoring political boundaries, sixty percent of the population lives within Courtenay-Comox-Cumberland settlement area cluster. An additional ten percent is located within 500 metres of that cluster. The remainder of the population is dispersed throughout the unincorporated centres (e.g., Black Creek, Union Bay, etc.) and along the Old Island Highway.



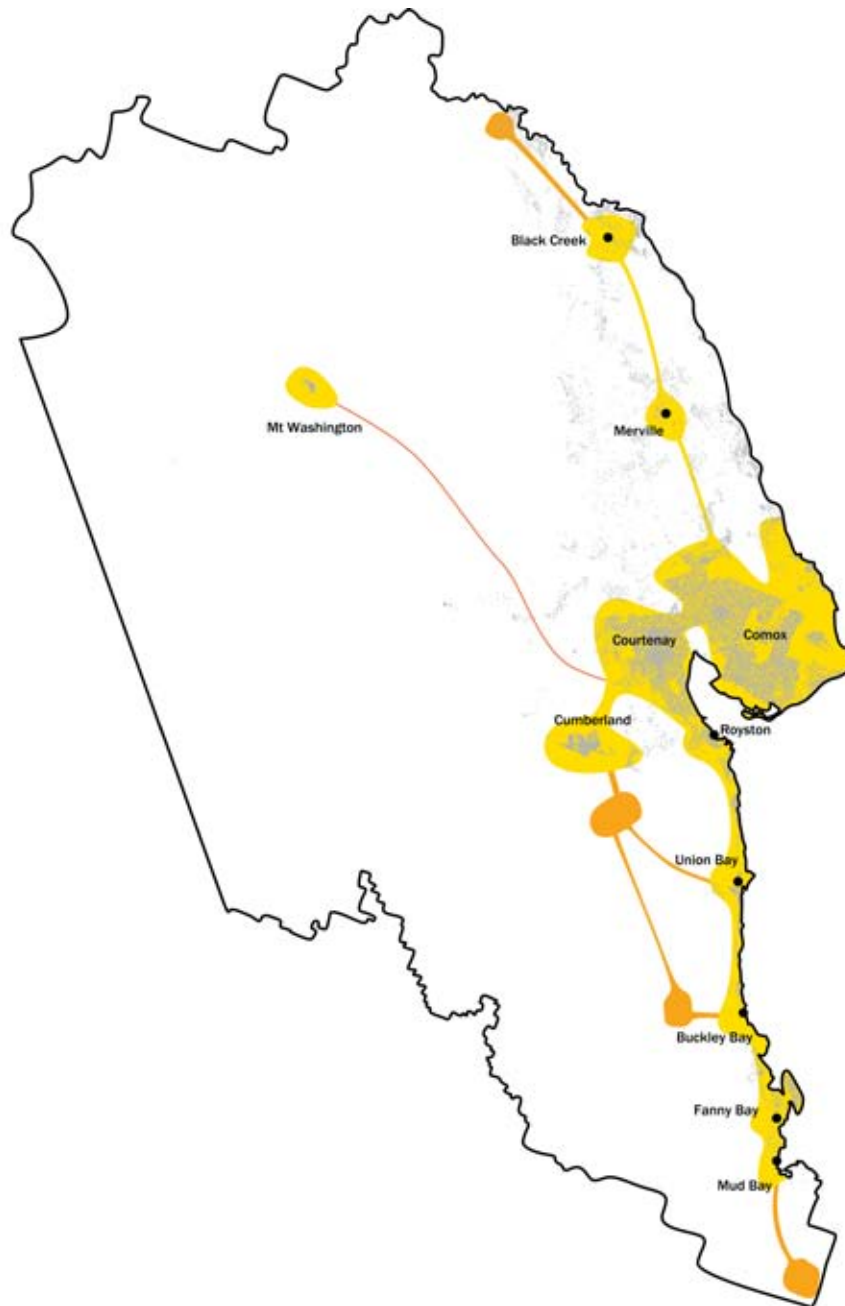
Approach 1 Focused Development – Tight Settlement Boundary

This illustrates an approach to growth that would concentrate most new development within the Courtenay/Comox/Cumberland settlement area. The settlement area includes some electoral areas that effectively make up core settlement area for the Comox Valley. Within this approach some development could also occur in other established settlement areas (e.g., Black Creek, Union Bay, etc.), but such development would be limited and managed to retain the existing character of those places.



Approach 2 Compact Nodal Growth

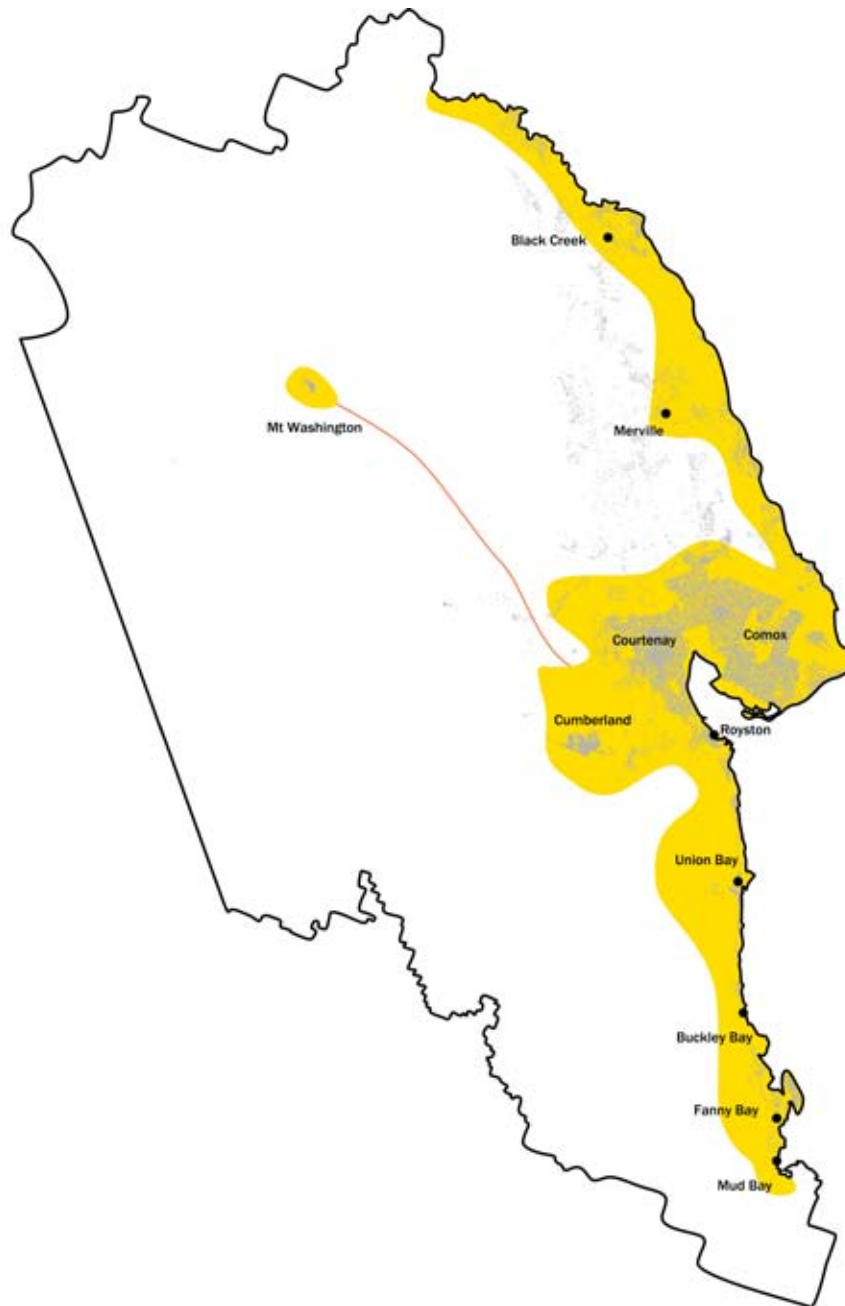
Similar to the concentrated growth approach, this approach also creates a settlement boundary around the existing Courtenay/Comox/Cumberland settlement area and the other established settlement areas. However, under this approach, less growth would be concentrated within the core settlement area and more growth would be permitted in other nodes (e.g., Black Creek, Union Bay, Mud Bay, etc.). Some additional growth along the Old Island Highway, which connects these nodes, could also be expected.



Approach 3

Compact Nodal Growth With New Settlement Areas

This is a variation of Approach 2, whereby new settlement area nodes could also be considered. The implication here is that the core area would be less dense than Approach 2 and/or existing settlements area nodes would not see as much growth.



Approach 4 Loose Settlement Area

This approach allows for a much larger land area to be available for development than the other approaches. Conceptually, new settlement areas could be established in a large zone located mostly east of the Old Island Highway. It would, however, protect resources such as the Agricultural Land Reserve and significant ecological features that were within the identified area. The whole area shown is unlikely to be developed over the next twenty years as the market would not support this pace of development; however, all of this area would be available for development according to market demand.

Next Steps

All Comox Valley residents, landowners, businesspeople and interested stakeholders are invited to review this document, and formally submit comments over the next few months. Comments relating to this background paper and RGS will be compiled and turned into a public record of feedback that will be available on the project website, in the fall of 2009.

There are a number of means to provide feedback:

Attend one of the upcoming June Open Houses

Tuesday, June 9

6:00-8:30pm

K'ómoks

Band Hall, 3320 Comox Road,
Courtenay

Wednesday, June 10

12:30-3:30pm

d'Esterre Senior Centre,
1801 Beaufort Avenue, Comox

6:00-8:30pm

Union Bay Improvement District,
5539 South Island Highway,
Union Bay

Or, provide feedback
over the summer months:

Email comments rgs@comoxvalleyrd.ca

Call the project office 250-334-6000

Drop by the project office,
CVRD boardroom,
550B Comox Road, Courtenay

All of the Open House materials,
including the second Comox Valley
RGS video, will be available on the
project website comoxvalleyrd.ca/rgs.
Check the project website for updated
materials, event listings and general
project information.

**Comments should be submitted
by September 15th.**

Following this second round of public
input, a third round of public engagement
will be undertaken in the fall 2009
at which time a set of recommended
strategies (policies, targets, actions)
and preferred approach to growth
management will be put forward for public
discussion. That public discussion will be
followed by a draft RGS in January 2010,
after which time formal public meetings
and hearings will be held during the
course of 2010.

Footnotes

CHAPTER 1

¹ The CVRD's boundaries correspond with the Courtenay Local Health Area (LHA 71), the smallest health services delivery area for which demographic statistics are maintained by the Province. LHA 71 also includes Denman and Hornby Islands. The islands are not included in the RGS, as their land use planning is managed by the Islands Trust, so this population has been subtracted out of population calculations in this chapter.

² In-migration (the number of people moving to a region) and fertility (a local area's birth rate) are the only two population drivers. In an economic recession, in-migration may decline because fewer people are moving to the region for employment or, in the case of Comox Valley in particular, fewer people are retiring to the region due to reduce retirement savings. As the P.E.O.P.L.E. methodology is based on

³ 2006 Statistics Canada Community Profile

⁴ The discrepancy between this population total and the Local Health Area data total of 60,288 is due to adjustments in the LHA data for census undercount and estimates for non-permanent residents.

⁵ 2006 Statistics Canada Community Profile

⁶ Dependency Ratio: a calculation of the number of people aged 15 and under plus those aged 65+ for every 100 persons aged 15-64. The child dependency ratio is the number of people aged 15 and under only as a percentage of the 15-64 population and the elderly dependency ratio is the number of people aged 65+ as a percentage of the 15-64 population.

CHAPTER 2

¹ For Figures 1 and 2: Statistics for the Regional District include the Strathcona region and are omitted from this table. Electoral Area statistics are not available.

² Often measured as 'months of supply', this is the number of months it would take to sell all current listings, based on average sales volume of previous months. Six months supply is considered 'balanced'.

³ "Comox Valley – Housing Market Overview", presented Jan 15, 2009. www.1stview.ca/announcements/forum2009/

⁴ CMHC Senior's Housing Market Survey – British Columbia – Date Released 2008.

⁵ Seniors Housing Development Forecast Tool (SHDFT), p.7

⁶ see the District of Saanich report on 'Age Friendly Cities' at www.gov.saanich.bc.ca/municipal/docs/pdfs/who_web_final.pdf

⁷ Estimated from Clarice Coty's presentation, presented Jan 15, 2009. www.1stview.ca/announcements/forum2009/

⁸ Smart Growth BC, 2007. Best Practices in Affordable Housing.

⁹ Vancouver Island Real Estate Board, Annual Sales Summaries 1999-2008

¹⁰ Data sources for Tables in this section: Vancouver Island Real Estate Board Annual Sales Summaries 1999-2008, and BC Stats Community Profiles 2001 and 2006

¹¹ CMHC, Rental Market Survey, October 2008

¹² "Comox Valley – Housing Market Overview", presented Jan 15, 2009. www.1stview.ca/announcements/forum2009/

¹³ see The Link Between Growth Management and Housing Affordability: The Academic Evidence. The Brookings Institution Center on Urban and Metropolitan Policy, February 2002. www.smartgrowthamerica.org/growthmang.pdf

¹⁴ Seniors Housing Development Forecast Tool (Shdft)

¹⁵ This is recommended by Courtenay's Affordable Housing Policy, see: www.city.courtenay.bc.ca/news/affordable-housing-policy.aspx

¹⁶ see previous footnote

CHAPTER 3

¹ Data sources include Census Canada, BC Stats, the Comox Valley Economic Development Society, regional district governments (Comox Valley and Strathcona), School District #71, North Island College Region, Vancouver Island

² (i.e., North American Industry Classification System – NAICS)

³ The Labour Market Needs Assessment was prepared for the Comox Valley Economic Development Society to identify current and forecasted labour market needs for the Comox Valley and to interpret the implications of such trends for Comox Valley labour market and business strategies.

⁴ Here it was assumed that the potential growth of some primarily local-serving sectors, like retail trade, would remain relatively consistent with forecast population growth.

⁵ A linear 1.35% growth rate was developed based on RGS population projections to model the employment projections

⁶ The ratio of the number of people (15-64 years old) with a job to the total population aged 15 to 64 years

⁷ Courtenay LHA includes Electoral Area K (Denman and Hornby Islands) which is not a part of the RGS planning area. The population of Area K is small enough not to skew the data for the one figure. All other tables do not include Area K.

⁸ The number of people receiving EI benefits is not the same thing as the number of persons unemployed, since not all unemployed people are eligible for those benefits and some people receiving EI benefits for things like maternity leave and fishing benefits may not be considered unemployed.

⁹ Labour force expressed as a percentage of the population aged 15 years and over.

¹⁰ The ratio of employed persons to population 15 years and over. Also referred to as employment -population ratio.

¹¹ The unemployment rate is the % of the labour force that actively seeks work but is unable to find work at a given time. Discouraged workers—persons who are not seeking work because they believe the prospects of finding it are extremely poor—are not counted as unemployed or as part of the labour force.

¹² 17% of workers in the private sector and 78% of public sector workers enjoy "defined benefit" plans. These plans guarantee a pre-set pension income regardless of what stock markets do. If the markets plunge, employers are obliged by law to make up the difference with tax-deductible contributions, though some plans may increase contributions for workers as well. "Un-defined" plans do not have this protection.

CHAPTER 4

¹ BC Transit interview, April 2009.

² The Economic Impact of The Comox Valley Airport and the Regional Tourism Industry. August 2007. Comox Valley Airport Committee.

CHAPTER 5

¹ BC's Fisheries and Aquaculture Sector, 2007 Ed.

² Ministry of Agriculture, Food and Fisheries, 2005

³ Stats Canada, 2006

⁴ Interview, Jill Hatfield. Ministry of Agriculture and Land.

⁵ Interview, Ministry of Agriculture and Land, Agrologist Jill Hatfield.

⁶ Statistics Canada Census, 2006

⁷ Ministry of Agriculture, 2007

⁸ Jill Hatfield. Ministry of Agriculture and Land

⁹ Jill Hatfield. Ministry of Agriculture and Land

¹⁰ Figure 5 indicates the average sale value per hectare for properties by size. Sales values were adjusted to 2007 dollars using an inflation calculator from the Bank of Canada.

¹¹ 2007 Financial Post Canadian Demographics Income Estimates

¹² People Excited about farmers' market home idea, Lindsay Chung, Comox Valley Record, www.bclocalnews.com/vancouver_island_north/comoxvalleyrecord/news/41538877.html

¹³ Permitted uses set out in the OCP and the ALC are: agriculture; farm experience tourism; home occupations; residential associated with farm activity; parks, recreation and open space; fish hatcheries and enhancement; temporary commercial use; forestry, including woodlots and portable sawmills; and public and private utilities.

¹⁴ www.al.gov.bc.ca/resmgmt/Food_Self_Reliance/BCFoodSelfReliance_Report.pdf

¹⁵ Agricultural Plan 2002, p. 2

¹⁶ Comox Valley Farmers' Institute Presentation to the Farm Tax Review Panel, November 20, 2008, Courtenay BC

¹⁷ Centre for Shellfish Research <http://www.viu.ca/csr/facilities/fieldsites.asp>

¹⁸ Larger chain stores tend to have a higher profit margin so that farmers end up selling their goods to the grocery store at a lower cost.

¹⁹ People Excited about farmers' market home idea, Lindsay Chung, Comox Valley Record, http://www.bclocalnews.com/vancouver_island_north/comoxvalleyrecord/news/41538877.html

²⁰ B.C.'s Food Self-Reliance: Can B.C. Farmers Feed Our Growing Population?. B.C. Ministry of Agriculture and Lands (2006)

²¹ Michael von Hausen's diagram and concept of integration between agriculture and urbanism concurrent at all levels of design.

CHAPTER 6

¹ For more information refer to the Sensitive Ecosystems Inventory: East Vancouver Island and Gulf Islands 1993 – 1997, Volume 2: Conservation Manual, a joint federal and provincial initiative

² For more information refer to the Sensitive Ecosystems Inventory: East Vancouver Island and Gulf Islands 1993 – 1997, Volume 2: Conservation Manual, a joint federal and provincial initiative

³ For more information, refer to the Nature Without Borders report by the Comox Valley Land Trust, July 2008

⁴ Formerly the Ministry of Sustainable Resources

⁵ Nature Without Borders Phase 1 – Final Report, Comox Valley Land Trust Regional Conservation Strategy July 2008

⁶ July 2004 SEI report :Updated Sensitive Ecosystems Inventory Maps for East Vancouver Island and Gulf Islands published by Environment Canada and the BC Ministry of Environment et al http://a100.gov.bc.ca/appsdata/acad/documents/r2124/SEI_2004_general_1130978205582_bf70e627bdd341179d6fadfd56e484d.pdf

⁷ Important Bird Areas of Canada <http://www.bsc-eoc.org/iba/site.jsp?siteID=BC014>

⁸ See page 13, Nature Without Borders Report

⁹ While technically the Local Government Act only provides explicitly for density bonusing in exchange for affordable housing, by using comprehensive development zoning in conjunction with a negotiation process, local governments have the potential to effectively achieve density bonusing for other purposes, such as the preservation of amenities like parks and natural areas.

CHAPTER 7

¹ The water system information provided comes largely from the work of Sonya Jossen undertaken for the Vancouver Island Water Watch Society.

² Infiltration Gallery is usually a structure used to supplement a storm sewer, by directing storm runoff from non-road areas.

³ http://74.125.93.132/search?q=cache:Xjdsp4GUjMoJ:www.watergovernance.ca/factsheets/pdf/FS_Water_Use.pdf+canada+per+capita+water+consumption&cd=6&hl=en&ct=clnk

CHAPTER 8

¹ Population health: An approach to health that aims to improve the health of an entire population and to reduce health inequities among population groups. In order to reach these objectives, it looks at and acts upon the broad range of factors and conditions that have a strong influence on health, including the physical environment and land use.

² Built environment: the arrangement of buildings, parks, schools, roads and other infrastructure encountered in daily life.

³ *Healthy Built Environments*: built environments that create more opportunities for physical activity and recreation, support active transportation choices (see definition below), encourage more social activity and cohesion, provide a diverse range of housing options, and protect and preserve environmental features.

Active transportation: all human-powered, or non-motorized modes of transportation, primarily walking and biking.

⁴ The North Vancouver Island Health Service Delivery area includes the entire CVRD, which is the service area's major population centre.

⁵ Body Mass Index, or BMI, is a measure of a person's ratio of weight (kg) to height (m). Individuals are classified into one of four groups based on their BMI. The categorizations are based on the effect body weight has on disease and health – as BMI increase, the risk for certain diseases increases.

⁶ The CVRD's boundaries correspond with the Courtenay Local Health Area (LHA 71), the smallest health services delivery area for which statistics are maintained. LHA 71 also includes Electoral Area K of the CVRD (Denman and Hornby Islands).

⁷ Vancouver Island North LHA and Cowichan LHA, the Island's two former industrial centres were higher.

⁸ Promoting Physical Activity through Healthy Community Design. Active Transportation Collaboratory, Centre for Human Settlements, University of British Columbia. April 2009.

⁹ Ibid. page 32.

¹⁰ Victoria Transportation Policy Institute

¹¹ Research shows that the majority of transit trips (>95%) begin and end on foot

CHAPTER 9

¹ The IPCC is a scientific intergovernmental body set up by the World Meteorological Organization (WMO) and by the United Nations Environment Program (UNEP). The IPCC was established to provide an objective source of information about climate change. The IPCC does not conduct any research nor does it monitor climate related data or parameters. Its role is to assess on a comprehensive, objective, open and transparent basis the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risks, potential impacts, and mitigation and adaptation strategies of climate change.

² Bernstein, Lenny, et al. "Climate Change 2007 Synthesis Report." Intergovernmental Panel on Climate Change, 2007.

³ Miller, Nicole and Cavens, Duncan. "City of North Vancouver 100 Year Sustainability Vision GHG Measurement and Mapping Technical Paper. December 2008.

⁴ Federation of Canadian Municipalities. 2008. "Five-Milestone Framework for Reducing Greenhouse Gas Emissions."

⁵ Campbell, Colin and Stainsby, Cliff. August 2008. "Greenhouse Gas Emission Reduction Scenarios for BC: Meeting the Twin Objectives of Temperature Stabilization and Global Equity. Canadian Centre for Policy Alternatives-BC Office, the Sierra Club of BC, and the BC Government and Service Employees' Union.

⁶ Ibid, 8.

⁷ The Climate Action Team has 22 members and one special advisor, representing various private, public and environmental interests.

⁸ The City of Courtenay has made significant strides in meeting the goals outlined in the Climate Action Charter. The City of Courtenay completed a Corporate Energy and GHG Emissions Inventory in October 2008. In addition, on February 16,

2009, Courtenay City Council approved the adoption of a Corporate Climate Action Strategy. This strategy proposes numerous actions that will lead to reduced energy consumption and emissions associated with municipal operations, in order to meet the goal of being carbon neutral by 2012.

⁹ The Village of Cumberland has chosen not to sign the Climate Action Charter nor introduce significant local initiatives/actions to address GHG emissions.

¹⁰ www.cd.gov.bc.ca/ministry/whatsnew/climate_action_charter_update.htm

¹¹ Buholzer, Bill. "British Columbia Local Governments and Climate Change."

¹² Walker, I.J. and Sydneysmith, R. (2008): British Columbia; in From Impacts to Adaptation: Canada in a Changing Climate 2007, edited by D.S. Lemmen, F.J. Warren, J. Lacroix and E. Bush; Government of Canada, Ottawa, ON, p. 329-386.

¹³ ICLEI - Local Governments for Sustainability is an international association comprised of 1,075 cities, towns, counties, and their associations. ICLEI provides technical consulting, training, and information services to build capacity, share knowledge, and support local government in the implementation of sustainable development at the local level.

¹⁴ www.sustainablecommunities.fcm.ca/partners-for-climate-protection/

¹⁵ Sheldon, Ted. "Community Energy and Emissions Inventory (CEEI) Initiative." Powerpoint presentation. 2 April 2008.

¹⁶ Regional District of Nanaimo. "Regional Growth Strategy Review 2007-2008: A Discussion Paper on Greenhouse Gas Reduction Targets and the Regional Growth Strategy."

¹⁷ "Community Energy and Greenhouse Gas Emissions Inventory: User Needs Research." December 31, 2007. 2.

¹⁸ Comox Valley Regional District. Staff Report. August 28, 2008. www.rdcs.bc.ca/Agenda_minutes/CVRDCommittees/COW/09-Sep-08/a2-20080825_HMorgan_GHG-Report.pdf

¹⁹ www.env.gov.bc.ca/epd/climate/

²⁰ Miller, Nicole and Cavens, Duncan. "City of North Vancouver 100 Year Sustainability Vision: GHG Measurement and Mapping Technical Paper. December 2008.

²¹ Province of British Columbia. "Climate Action Plan." 2008.

²² An emission reduction strategy could outline green initiatives and actions that the developer is taking to reduce GHG emissions, such as the inclusion of green building standards, innovative waste management strategies and multi-modal transportation choices. The emission reduction strategy could also showcase how the proposed development is consistent with the Regional District's goal to address climate change.

²³ A settlement containment boundary (SCB) are lines drawn on planning maps around developed areas showing where urban land ends and rural land begins. The goal of SCB is to prevent low-density sprawl and encourage comprehensive development patterns. SCBs also creates certainty for developers and citizens by directing where infrastructure investment will occur, and, coupled with zoning and other planning policies, channel future growth and development into existing neighbourhoods and areas where density can be maximized and supported. www.wcel.org/issues/urban/sbg/

Glossary

Active transportation

Active transportation is any form of human-powered transportation. It is any trip made for the purposes of getting yourself, or others, to a particular destination- to work, to school, to the store or to visit friends.

Active transportation infrastructure

Active transportation infrastructure are those elements that support active transportation such as dedicated bike lanes and bike networks, sidewalks, and greenways for walking and riding.

Affordable housing

Cost of housing, including the cost of rent, mortgage and utilities, is less than or equal to 30% of household income

Agricultural Land Commission

Administrative body of the agricultural land reserve (ALR)

Agricultural Land Reserve (ALR)

The ALR was established by the Province of BC in 1973 to protect farmland from urbanization or development; includes both private and public lands that may be farmed, forested or vacant, but where agriculture is recognized as the priority use; it is administered by the Agricultural Land Commission (ALC)

Aquaculture

Aquaculture is the farming of freshwater and saltwater organisms including mollusks, crustaceans and aquatic plants.

Balanced community

Balanced community is the balance of jobs/housing/services/recreation/amenity at the community scale.

Baseline level of emissions

Indicates the total GHG emissions for a given year and provides municipalities with a point in time in which to compare all future GHG emission levels.

Biogeoclimatic zone

Provincial (BC) ecological classification that considers the diverse landscapes, strong regional climatic gradients, and complex local site variations found in the Province; the four biogeoclimatic zones in Comox Valley are: Alpine Tundra (AT), Coastal Douglas Fir (CDF), Mountain Hemlock (MH), Coastal Western Hemlock (CWH)

Body mass index

Method of classifying body weight according to health risk

Buffer

Perimeter of land located between two different land uses that is set aside to mitigate negative impacts between incompatible land uses; e.g. buffer between agricultural land uses and residential use or between park land use and industrial or resource land use

Built environment

Built environment refers to the human-made surroundings that provide the setting for human activity, ranging from the large-scale civic surroundings to the personal places.

Carbon neutral

Refers to achieving net zero carbon emissions by balancing a measured amount of carbon released with an equivalent amount sequestered or offset.

Carbon sink

Removes carbon dioxide and other GHGs from the atmosphere (e.g., forests, soils, ocean); carbon sinks are expected to slow the rate and extent of climate change

Cohort

Age group.

Community Energy and Emissions Inventory

Tracks GHG emissions for local governments in BC by sector: buildings, on-road transportation, solid waste and land use change.

Community Parks Service

Allows the CVRD to acquire and operate parkland within electoral areas A,B and C and to require 5% parkland dedication or cash in lieu at time of subdivision; cash in lieu of land must be used to purchase other land for community park purpose

Community supported agriculture (CSA)

Partnership of mutual commitment between a farmer and a community of supporters to provide a direct link between the production and consumption of food; supporters cover a farm's yearly operating budget by purchasing a share of the season's harvest and in return the farm provides seasonal produce to supporters

Compact urban form

A compact urban form is characterized by relative high density, mixed land-use and pedestrian-oriented habitation. This urban form has been proposed as one solution for sustainable urban planning.

Connectivity

Connectivity is the measure of the efficiency of the transportation network; refers to the directness of links and the number of connections in the path or road network

Conservation biology

Conservation biology is the scientific study of the nature and status of earth's biodiversity with the aim of protecting species, their habitats, and ecosystems from excessive rates of extinction.

Conservation covenant

Under the Land Title Act, a landowner and a covenant holder (e.g. the Regional District or a land trust) can agree to register a legally binding written agreement with the Land Title Office in which the landowner agrees that certain features of the property will be permanently protected; once registered, the covenant "runs with the land" so that the covenant holder can also require future land owners to protect the property, as required in the covenant agreement

Demographics

Demographics refers to selected population characteristics such as age, income, disabilities, mobility, educational attainment, home ownership, employment status and location. Distribution of values within a demographic variable, across households, is both of interest, as well as trends over time. A significant shift in demographics in an area can impact variables such as service delivery, housing preferences, and employment.

Density

Density is a measure of urban and rural form; can be measured in a number of different ways including the number of people, jobs or buildings in a given area

Density bonus

This is a system of exchange, allowing zoning requirements to vary in exchange for provision of certain amenities or housing that benefit the community.

Dependency ratio

A calculation of the number of people aged 15 and under plus those aged 65+ for every 100 persons aged 15-64. The child dependency ratio is the number of people aged 15 and under only as a percentage of the 15-64 population and the elderly dependency ratio is the number of people aged 65+ as a percentage of the 15-64 population

Development cost charge (DCC)

A DCC is a fee that the municipality levies on new developments to help cover the cost of expanding or improving transportation (such as roads, pedestrian and bicycle access), water, sewer, storm drainage and parkland to accommodate growth.

Development Permit Areas (DPA)

A DPA is a designated area where development permits are granted that allow property owners to construct, renovate or make addition to a structure on a property located within this area. DPAs are one of the strongest tools for shaping new development. They allow local governments to create site-specific requirements for development over and above basic zoning.

Ecological greenway

Greenway where the priority is to conserve ecosystems and/or wildlife corridors and may not normally have no public access.

Ecoregion

An ecologically and geographically defined area of land water based on the biodiversity of flora, fauna and ecosystems within it; an ecoregion often crosses municipal, provincial and even national borders.

Edge planning

The 'edge' refers to the urban/agriculture interface created by the ALR boundary and recognition of this as a distinct 'edge planning area'. As such, it is along this edge where specific policies and management techniques can be fairly applied to urban and agricultural land users.

Environmental Farm Plan (EFP)

Joint federal and provincial funding program that works with farmers to do an environmental audit of their agricultural operation and identify goals to reduce the environmental impact of their operation; funds up to 50% of costs to mitigate environmental impacts of farming and to improve wildlife habitat on agricultural lands (e.g. by planting hedgerows).

Environmentally Sensitive Area**Developments Permits (ESA DP)**

Land developers in Electoral Areas A, B and C are required to obtain an environmentally sensitive area development permit (ESA DP) when applying to build within 30 metres of a stream, the foreshore, or a wetland with fish presence, or within 200 metres of an eagles nest, or within 300 metres of a heron nest; permits may be place parameters on development, such as where a building can be sited or restriction of activities during breeding seasons.

Estuary

An estuary is a semi-enclosed coastal body of water with one or more rivers or streams flowing into it, and with a free connection to the open sea.

Green buildings

This is a building design that focuses on increasing the efficiency of resource use- energy, water, and materials- while reducing building impacts on human health and the environment during the building's lifecycle, through better siting, design, construction, operation, maintenance, and removal.

Green house gas (GHG)

Carbon dioxide, methane (CO₂), nitrous oxide (N₂O) and methane (CH₄), expressed as a CO₂ equivalent (CO₂e); typically generated from the use of fossil fuels to light, heat, cool and ventilate buildings (including homes and offices) and to power motorized vehicles, municipal operations, and industrial processes; and the decomposition of organic waste in landfills

Greenfield

This is a term used to describe a piece of previously undeveloped land, in a city or rural area, either currently used for agriculture, landscape design, or just left to nature.

Ground truthing

Refers to information that is collected "on location." This is especially important in order to relate image data to real features and materials on the ground.

Habitat fragmentation

Habitat fragmentation describes the emergence of discontinuities (fragmentation) in an organism's habitat.

Improvement Districts

Autonomous local authorities governed by elected trustees, focused on providing services to local landowners e.g. water provision; granted through powers by the Province to enact and enforce regulations and charges, to assess and collect taxes, to acquire, hold and dispose of lands, to borrow money and to expropriate lands required to carry out its functions; RGS study area includes five Improvement Districts: Ship's Point Improvement District, Fanny Bay Waterworks District, Union Bay Improvement District, Royston Improvement District and Sandwick Improvement District.

Infill

In urban planning and development of land industries, infill is the use of land within a built-up area for further construction, especially as part of a community redevelopment or growth management program or as part of smart growth. It focuses on the reuse and repositioning of obsolete or underutilized buildings and sites.

Intelligent transportation systems (ITS)

Use of advanced computer technology such as geographic information system software (GIS) and global positioning systems (GPS) to deliver efficient and on-time transit to the user.

Land use

This is the human modification of natural environment or wilderness into built environment such as fields, pastures, and settlements.

Land use category or designation

A description of permitted land uses for specified areas within a planning jurisdiction. There can be a number of different types of land uses (residential, recreational, commercial, institutional, etc.) within a given area.

Large-format retail

This is a term applied to large floor plate, one-storey retail outlets, usually operated as part of a chain, that locate on individual sites or that cluster on a large site, sometimes adjacent to each other. Large-format stores, commonly referred to as “big-box” stores, serve a region-wide market and typically locate at highly visible locations at major intersections or adjacent to highways.

Local area plan

Local Area Plans is a legal document and is a public statement of planning policies. It is valid for six years from the date of adoption by the Council. The Plan should be compatible with the OCP and RGS.

Mariculture

Mariculture, also known as shellfish aquaculture, is the cultivation and harvesting (farming) of aquatic invertebrates and marine

plants; cultivation implies some form of human intervention in the rearing process to enhance production, such as regular stocking and protection from predators; it also implies individual or corporate ownership of the stock being cultivated.

Official community plan (OCP)

An OCP can be developed by both municipalities and regional districts. The OCP provides the longer term vision for the community. Under the Local Government Act section 875, an OCP is a statement of objectives and policies to guide decision on planning and land use management, within the area covered by the plan, respecting the purposes of local government.

Recharge areas

A recharge area is where rainfall, irrigation, garden water or water from waterways seeps into the ground and add water to the ground water system.

Recreation greenway

Greenway where the priority use is for non-motorized transportation, such as walking, cycling and/or horseback riding.

Regional conservation

Approach to protecting the diversity and richness of species and ecosystems throughout Comox Valley based on the principles of conservation biology; requires the collaboration of stakeholders in the Valley, including provincial, regional and municipal governments, K’omoks First Nation, private landowners, and non-governmental organizations like the local Comox Valley Land Trust and Project Watershed.

Regional Parks Service

Currently an inactive service for the CVRD; allows CVRD to raise money to fund acquisition, management and operation of regionally significant parkland that is used by residents region-wide.

Renewable energy

Renewable energy is energy generated from natural resources- such as sunlight, wind, rain, tides and geothermal heat- which are naturally replenished.

Right to Use Agreements

a landowner may enter into a right to use agreement with a government agency or a land trust or other property owner for use of a portion or all of their land; the agreement can be terminated by either party e.g. an agreement could permit the public to use a trail over private property.

Riparian area

This is the interface between land and a stream. Plant communities along the river margins are called riparian vegetation. Riparian zones are significant in ecology because of their role in soil conservation, their biodiversity, and the influence they have on aquatic ecosystems.

Ripple effect

The influence of land use planning policies on human behaviour, such as those policies expressed in a RGS and OCP, and the impacts of these land use policies on human health.

Rural Comox Valley Official Community Plan (OCP)

OCP for Electoral Areas A, B and C administered by the Comox Valley Regional District.

Secondary suites

This is an urban planning term for an additional separate dwelling unit on a property that would normally accommodate only one dwelling unit. A secondary suite is considered “secondary” or “accessory” to the primary residence on the parcel.

Sensitive Ecosystem Inventory (SEI)

Federal and provincial government mapping project to systematically identify and map rare and fragile ecosystems in a given area; SEI is intended for use in a variety of land-use planning processes, such as the RGS; its purpose is to identify remnants of rare and fragile ecosystems (on land) and to encourage land-use decisions that will ensure the continued integrity of these ecosystems;

Settlement boundary

This is the extent of physical development around a town or village, usually defined on community and regional plans. The purpose of the settlement boundary is to direct growth to appropriate places with existing infrastructure and to protect working landscapes and natural areas.

Shellfish aquaculture

Shellfish aquaculture, or mariculture as it is sometimes called, is the cultivation and harvesting (farming) of aquatic invertebrates and marine plants; cultivation implies some form of human intervention in the rearing process to enhance production, such as regular stocking and protection from predators; it also implies individual or corporate ownership of the stock being cultivated.

Statutory Right of Way

Land use designation to permit a right of way for a public trail, sidewalk, water or sewer pipes, drainage, hydro lines or other utility.

Stormwater

Describes the water that originates during precipitation events. It may also be used to apply to water that originates with snowmelt or runoff water from overwatering that enters the stormwater system. Stormwater is a concern for two main issues: the volume and timing of runoff water and potential contaminants that the water is carrying.

Integrated Water Management (IWM)

Refers to the integrated management of stormwater with the goal to improve runoff quality, reduce the risk and impact of flooding and deliver additional water resources. This strategy includes stormwater harvest, biofiltration and retention.

Transit supportive land use

These are development patterns which make transit less expensive, less circuitous, more efficient and more convenient, as well as those which make access to the system more attractive to the potential transit user.

Transit-first development

Provision of convenient and effective transit service in new developments from the time that the first person(s) move in or business(es) opens.

Transportation demand management (TDM)

general term for strategies that result in more efficient use of transportation resources; emphasizes the movement of people and goods rather than private motor vehicles; gives priority to walking, cycling, ridesharing, and public transit.

Travel allowances

Financial payment provided to employees instead of parking subsidies; commuters can use this money to pay for parking or for another travel mode.

Urban containment boundary

An urban containment boundary sets aside land to be protected from most forms of development. Usually the boundary will delineate the edge of town and the beginning of rural areas.

Value added agriculture

This is a process of increasing the economic value and consumer appeal of an agricultural commodity such as farm tourism, B&Bs and farmgate sales.

Variable messaging system

Part of an intelligent transportation system (ITS) used to display messages at remote locations from a centralized computer system; uses include displaying route information, delays and cancellations updates in real time at transit stops.

Water balance model

The Water Balance Model (WBM) for BC is an on-line tool that helps users gauge the potential for developing or redeveloping communities while maintaining the original hydrologic condition. The model evaluates the effectiveness of applying different stormwater source controls under different development conditions.

Watershed planning

Watershed management that involves the community in addressing water use, water quality, and protection of critical recharge areas as well as in managing competing demands for water among agriculture, wetlands and wildlife habitat, fishery and other water users.

Zoning by-law

A zoning bylaw contains provisions that regulate the use, size, height, density and location of buildings on properties within a jurisdiction.

Zoning Incentives

Zoning tools used to encourage a developer to provide an amenity or cash-in-lieu of an amenity in return for favourable zoning permissions e.g. increased density (see density bonus).