



REPORT

Cowichan Communities Health Profile

Golder Associates Ltd.

June 2014

Acknowledgements

This report was developed by Golder Associates Ltd. (Golder) and Our Cowichan Communities Health Network (Our Cowichan) and partners. Golder and Our Cowichan would like to thank the community, key stakeholders and their organizations and associations for their role in developing this Health Profile for the Cowichan region. This profile provides an overview of the health and well-being of citizens in the Cowichan region and is intended as a framework for Our Cowichan and the many dedicated organizations throughout the region who are working to develop programs to improve the health of our communities and residents.

ABOUT OUR COWICHAN COMMUNITIES HEALTH NETWORK:

Our Cowichan Communities Health Network includes individuals, groups and organizations. We share a commitment to facilitating connections for good health within our communities. Our common ground is the 12 Key Determinants of Health adopted by the Public Health Association of Canada.

For good health, people need more than good health care: they also need adequate income, employment, education, social connections and healthy places to live. In fact, all 12 Determinants interact and affect health. By considering the whole picture and working together, all citizens of Cowichan communities can enjoy better health.

VISION:

All citizens of the Cowichan Communities enjoy good health.

MISSION:

We facilitate discussion, act as a conduit for information and are a catalyst for action on 12 Key Determinants of Health.



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Executive Summary

Project Summary

Our Cowichan Community Health Network (Our Cowichan) engaged Golder Associates Ltd. (Golder) to complete a Health Profile for the Cowichan region, an area coinciding with the Cowichan Valley Regional District boundaries. The Health Profile is based on the Canadian Public Health Agency's 12 Key Determinants. The profile incorporates the results of the Economic Status Report (a separate discrete deliverable) and an overview of all the determinants and how the region measures up to the province, the Regional District of Nanaimo, and Vancouver Island; and how sub-regions compare to each other (local health areas, census subdivisions, or school district boundaries). Additional supporting deliverables within the scope of work include comparative GIS-based mapping of selected health indicators and health status statistics and a web-based asset mapping component that covers educational, family, aboriginal, health care, social support, and recreation assets.

This project serves to advance the first goal of the OCCHN's strategic plan which is to establish priorities for evidence-based action. Funding from Island Health supported this work.

Process

Work on this project began in December of 2013 and concluded in June of 2014. Early in the process, the consulting team collaborated with the Asset Mapping Committee of the network to establish the particular health determinants for each of the "12 Key Determinant" categories. This framework formed the basis for the Health Profile. The work was conducted in two phases in which the first phase comprised the Economic Status Report and comparative GIS based mapping; the second phase

comprised the completion of the full Health Profile, community engagement (five workshops in four communities and one for First Nations) and four key informant interviews), a community-wide health survey, and the creation of a web-based asset mapping tool. The consultant team facilitated meetings with the asset mapping committee on a regular basis as a means of providing input, receiving feedback, and collaborating on research methodology, information sources and community engagement approaches.

Process to Conduct Research

The research for this project incorporated the principle of triangulation, an approach using two or more methods to confirm study results, using a variety of quantitative and qualitative sources addressing the same topics. A combination of secondary and primary sources was used to obtain information. The first phase of the work focused heavily on secondary sources such as Statistics Canada and Island Health. Additional supporting literature review was undertaken to provide context and understanding for each of the 12 Key Indicators. Island Health provided the bulk of the health status data (morbidity and mortality) as well as statistics on healthy behaviours and maternal and child health indicators.

The second phase of the work focused on primary sources of data collection, including a community wide health survey, area-specific community workshops, and key informant interviews. The community survey was distributed widely via Our Cowichan's network and completed by 651 respondents. The survey was designed as a voluntary "opt in" for all respondents; the project scope did not allow for representative sampling. The survey

included base information on gender, age, community of residence, national origin; perception of personal health and well-resources; and community physical environment being and health behaviours; access to healthy options and resources; and community physical environment.

Findings and Conclusions

On a positive note it is clear that the region has a relatively healthy natural environment, a wealth of health promoting community assets, a thriving non-profit volunteer community, a growing and substantially integrated aboriginal community, a diverse and growing economy, and a rich arts and cultural scene. Comparatively, the region is doing as well or better than the provincial average in many of the 12 Key Indicators; and where the region lags, the trend is generally toward improvement.

Health Status

Areas where improvements are needed in **population health status** include addressing rates of teen mothers, preterm births, low birth weight babies and the proportion of women who smoke during pregnancy. The region experiences high rates of child hospitalizations for injuries and poisoning (Lake Cowichan and Cowichan LHAs), high rates of child respiratory disease hospitalizations (Ladysmith and Cowichan LHAs) high rate of heart disease (Ladysmith and Cowichan LHAs), and a high rate of alcohol related deaths (all LHAs).

Highlighted areas of attention by the **Key Indicators** follow by groupings of political subdivisions and First Nations communities in addition to the standard census or local health area subdivisions.

Income and Social Status

Income inequality increased substantially in the City of Duncan, Lake Cowichan and the Northern Electoral Areas. First Nations economic diversity is declining. The City of Duncan had the highest proportion of households who spend 30% or more of their total income on shelter.

Social Support Networks

The City of Duncan reported the highest proportion of seniors living alone, above the provincial average. The City of Duncan and First Nations communities had the highest proportions of single mothers in the region. First Nations communities in the Cowichan Valley Regional District (CVRD) had the highest proportion of single fathers, above the provincial average.

Education and Literacy

High school graduation rates in the Nanaimo Ladysmith School District remain little changed since 2008. Although the rate is improving, many of the aboriginal population are without a high school diploma.

Employment and Working Conditions

The CVRD has a low labour force replacement ratio. Many young adults are leaving the area for jobs outside of the region.

Social Environments

The region's first homelessness survey identified a number of individuals facing absolute homelessness, a larger population fitting the definition of living in "precarious housing," and identified a need for more culturally appropriate housing. The number of senior residential care spaces in the CVRD is disproportionately small and there are a sizable number of seniors waiting for placement in residential care facilities at any given time.

Reported incidents of violence against women in the Cowichan Valley are twice the provincial average.

The proportion of children in need of protection is significantly higher in the Cowichan Local Health Area (LHA) than the provincial and Vancouver Island average. The Cowichan and Ladysmith LHAs had over twice as many children in care than the provincial rate.

The low density sprawling character and automobile dependency of the CVRD contributes to social isolation and limited access to services for many.

Physical Environments

Settlement patterns in the region are primarily low density with a limited number of areas with sufficiently high densities and land use mixes to support and encourage active forms of transportation such as walking and cycling. Close to half of survey respondents reported there were no safe and accessible pedestrian routes in their community and over half of respondents reported there were no safe and accessible bike lanes or routes. The majority of daily commuters in the CVRD drive vehicles alone to work, which contributes to a larger per capita carbon footprint. Of the respondents who take transit, only a small minority have access to convenient transit services and

routes that get them where they need to go in a reasonable time frame. A minority of respondents reported that bike lanes or routes were available in their community but they were either unsafe or inaccessible.

Air and water quality are important environmental concerns. Survey respondents identified poor air quality due to backyard burning, chimney smoke, vehicle exhaust, air pollution from industry, and dust. Survey respondents believe groundwater quality is compromised by manure run-off and polluting contaminants. A sizable number of respondents from the City of Duncan, the Electoral Areas, and First Nations communities reported that tap water was not safe to drink. Most of the wells located in First Nations communities have boil water advisories.

The City of Duncan has the highest number of property and violent crimes per 1,000 people. Serious juvenile crime rates in the Cowichan and Lake Cowichan LHAs were above the provincial average.

The proportion of housing in need of major repair is significantly higher in First Nations communities.

Personal Health & Coping Skills

Less than half of respondents reported that they are exercising more than three times per week. Alcohol sales in the Lake Cowichan LHA exceed the Vancouver Island and provincial average by a substantial margin.

Healthy Childhood Development

The Lake Cowichan LHA saw a dramatic worsening in the Early Development Index (EDI) indicator in recent years with an increasing number of kindergarteners rated vulnerable in one or more categories (physical, social, emotional, language, and communication), placing it well above the BC average.

Biology & Genetic Endowment

No relevant issues were identified for this project.

Health Services

Less than half of applicable survey respondents reported getting recommended regular check-ups for pap smears and

mammograms in the past year. The Ladysmith LHA had higher proportions of emergency visits per 1,000 for every age group compared to the Vancouver Island average.

Gender

It is noted that women's median income earnings are lower than men's, a trend that is similar to provincial and national norms.

Culture

The aboriginal population faces many challenges in retaining their cultures and languages. Approximately half of all survey respondents had some participation in the collection of their own food (grow, hunt, gather).

Next Steps

Recommended Actions

Actions emerging from the research, community survey, and community workshops are identified here and organized according to area-wide actions and hot topics. These actions may be viewed as priorities by workshop attendees, however, they will need to be further reviewed and prioritized by Our Cowichan Communities Health Network and partner organizations in a participatory engagement context.

Community priorities were also identified in community workshops and represent a starting point for future discussions and action planning which will further be informed by the findings of this health profile and any additional research. A list of priorities by community is provided in Appendix B.

Area wide

- Undertake action planning in communities with community leaders, network members and partner organizations. The OCCHN has recently obtained grant funding for this initiative.
- Create a priority setting framework that is based on a participatory approach and principles of need, organizational mandates, resources, collaboration, and efficacy.
- Facilitate building organizational ownership of relevant priorities consistent with the mandates of partner organizations within the network.
- Consider an expanded community survey covering specific topics that is statistically significant (opt out) and ensures representation based on gender, ethnicity, residency, and other parameters deemed important. The following topics could benefit from such a survey:

- Participation in community organizations, teams, and groups
- Barriers to healthcare and well-being
- Participation in community organizations
- Daily consumption of fruits and vegetables
- Number of times people typically exercise per week
- Amount of time people typically spend in front of screens per day outside of work/school
- How many visited a dentist in the past year
- The extent to which people grow, hunt, or gather their own food

Hot Topics

Specific hot topics are organized by vulnerable populations, physical activity, health services, physical environment, priority communities, and culture. The specific hot topics were identified on the basis of any one or combination of the following: 1) the prominence of the topic in the overall findings; 2) the extent to which the topic is worse than the provincial or Island Health average; 3) the identification of the topic in workshops and key informant interviews; and, 4) the extent to which they link across determinants.

1. For **teenage women, pregnant women and mothers** strengthen social support services within the existing networks; First Nations community culture and approaches can provide inspiration.
2. For **children**, prioritize reduction of vulnerabilities and promote holistic child health through “Success by 6” programs and similar initiatives. Promote physical literacy, movement with competence and confidence in a wide variety of physical activities in multiple environments.

3. For **young adults (20-24)** focus on full-time job placement with appropriate training and education.
4. For the **homeless and precariously housed**, adopt a collaborative area-wide “Housing first” approach.
5. For the **elderly**, promote inclusionary approaches and expand access to services. First Nations approaches can provide inspiration.
6. Promote **increased physical activity for all populations** and throughout the region by adopting “walk first” approaches to community design and transportation planning. Encourage and facilitate a movement to get children to spend more time in nature.
7. For a healthier **natural environment** collaborate and prioritize improving air quality—especially particulate matter-- and water quality--both groundwater and surface water. Reduce greenhouse gas emissions by decreasing automobile dependence and increasing use of active forms of transportation. Also, reduce CO² emissions by ‘walk first’ policies.
8. The **communities** of the City of Duncan, Cowichan Lake LHA, and Cowichan LHA have a larger proportionate share of health challenge and deserve focused attention.
9. **Cultural reconciliation** between aboriginal and non-aboriginal peoples, as well as other cultural groups, is a fundamental step in improving everyone’s health. Specific actions include community events such as “Walk for the Nations,” programs like “Creating Cultural Connections,” providing cultural safety for health services, increasing access to healthy and culturally appropriate food, promoting the use of traditional languages,

including the instruction of the Hul'qumi'num Language in schools.

Partners

A number of partner organizations are identified here that represent any one or more of the following: 1) a high level of interest; 2) staff and funding capacity; 3) a region-wide mandate; and, 4) technical expertise to assist in achieving the desired outcomes identified by the OCCHN. While by no means an exhaustive list of partners, the following organizations are viewed as essential partners:

- Island Health
- Cowichan Valley Regional District (CVRD)
 - Planning, environmental management, and economic development functions in particular
- Cowichan Tribes
- House of Friendship Society
- Social Planning Cowichan
- Cowichan Valley School District (79)
- CVRD Hospital Board
- Success by 6
- Cowichan Women Against Violence Society
- Ministry for Children and Family Development
- Ministry of the Environment
- Ministry of Forests, Land, Natural Resource Operations

Introduction

Project Overview

Our Cowichan Communities Health Network (OCCHN) was established in 2009 to facilitate a sense of shared responsibility for the region's overall health and well-being and to improve the quality of health-related decisions and health services within the Cowichan region.

The OCCHN's Three Year Strategic Plan has five goals:

1. Establish priorities for evidence-based action,
2. Advance community education on prevention, wellness and health promotion,
3. Advocate for appropriate health services for all citizens
4. Leverage existing resources, and
5. Enhance the network's operations.

As part of the OCCHN's mission to act as a local catalyst for action, OCCHN retained Golder Associates Ltd. (Golder) to develop a health determinants profile for the Cowichan region, geographically coinciding with the Cowichan Valley Regional District (CVRD). This work provides a tool for Cowichan region residents, agencies and community leadership to help identify factors that may need attention in order to improve local health and well-being. This report presents the status of factors in the Cowichan region that comprise the health determinants recognised by the Public Health Agency of Canada (Public Health Agency of Canada, 2013).

According to the World Health Organization, the promotion of health goes beyond mere health care; health cannot be separated from other policy objectives. The way society functions and is organized also has implications for peoples' health, including work and leisure (World Health Organization, 2014a).

The Senate Sub-Committee on Population Health estimated that 50% of a population's health status is attributable to social and economic conditions, with the health system accounting for 25%, biology and genetics endowment for 15%, and physical environment for 10% (The Standing Senate Committee on Social Affairs, Science and Technology, 2009). In Canada, health and socio-economic status are highly correlated, with the largest health disparities seen in the First Nations and Métis population (de Laplante et al., 2013).

This health profile is intended to be a "living document" to guide health and wellness planning throughout the Cowichan region.

An interactive community map supports the health profile and may be found at www.cchn.ca and lists a wide range of community assets.

Data Sources

Literature Review and Census Data

Available data were reviewed at the local and sub-regional level and an online review of related academic literature and similar studies was conducted to develop the indicators for inclusion in this project.

Secondary data sources include:

- Statistics Canada Census of Population (2001, 2006, 2011)
- Statistics Canada National Household Survey (2011)
- Statistics Canada, Canadian Community Health Survey (2012)
- Statistics Canada, Canadian Community Health Survey – Mental Health (2012)
- British Columbia (BC) Statistics
- British Columbia (BC) Vital Statistics Agency
- Vancouver Island Real Estate Board and Canadian Real Estate Board
- BC Ministry of Education
- BC Ministry of Justice
- Social Planning Cowichan
- Cowichan Green Community
- University of British Columbia’s Human Early Learning Partnership

A complete list of information sources is provided in the References section on Page 173.

Aboriginal-Specific Data

Because 20% of BC’s Aboriginal population lives on Vancouver Island and over 8,500 individuals in the CVRD self-identify as an Aboriginal person, select indicators were reported for the Aboriginal or First Nations communities populations where data were available, to better illustrate and understand their particular circumstances (Statistics Canada, 2013b). By identifying and acknowledging key issues that impact health and well-being of Aboriginal and non-Aboriginal populations, it is our hope that this report will provide a basis to identify solutions in partnership with First Nations communities to improve the health of all citizens throughout the region.

It is well known that Aboriginal communities have endured various hardships (Truth and Reconciliation Commission of Canada, n.d.). More recently a number of efforts are being made to bridge Aboriginal and community needs with other communities in ways that engage Aboriginals on their own terms.

Understanding history allows one to recognize the strength and reliance demonstrated by so many First Nations individuals, families and communities. Some traditions have remained strong over time, such as the value of family, community, and relationship to nature. These values are significant strengths for First Nations communities’ health and well-being and the CVRD as a whole. There is a need to acknowledge these strengths as well as the cultural differences between communities. As youth in other communities continue to move away, the high proportion of youth in First Nations communities in the CVRD represents one of the region’s key strengths for the future.

Additional Aboriginal-specific information is provided under Key Determinant 12: Culture (page 158).

Interviews

Primary data on seniors housing were collected through phone interviews with the Home and Community Care Access Program of Island Health (Vancouver Island Health Authority). Economic Development Cowichan was contacted to identify large business openings and closures. Interviews with Social Planning Cowichan complemented information gathered from their recent publications on housing and homelessness in the region.

Key Informant interviews were also conducted in-person with several leaders of the Cowichan First Nations. These interviews covered the topics of traditional resources, food security, and traditional education programs.

Cowichan Community Health Survey and Workshops

Primary data were collected via workshops and a community-wide survey.

Community input was gathered through five workshops held between March 24 and March 26 as well as a community survey. The workshops included morning and evening sessions and were held in Mill Bay, City of Duncan, Town of Ladysmith, and the Town of Lake Cowichan. Two workshops were held in the City of Duncan, one with a focus on First Nations, and one for the broader community.

Workshops were open to the public and were advertised through the Our Cowichan website (www.ourcchn.ca), Our Cowichan weekly newsletter and the members of the Our Cowichan network. Special effort was made to invite local organizations involved in community health such as Social Planning Cowichan, South Cowichan Seniors, Vancouver Island University, Island Health, Safer Futures, Success by 6, Cowichan Division of Family Practice, Volunteer Cowichan, Patient Voices Network, local health professionals, local governments and CVRD staff, First Nations organizations, Cowichan Tribes, Cowichan Seniors Association, South Cowichan Rate Payers, Literacy Now Cowichan, Cowichan Valley Hospice, Alzheimer's Society of BC, Cowichan District Hospital, Cowichan Valley Basket Society, Cowichan Intercultural Society, and the Cowichan Valley Men's Support Society. The invitations were broadly distributed via partner organizations to their networks and colleagues.

The community survey ran from March 24 to April 25, 2014 and collected data regarding demographics, individual health practices and health status, access to health resources, and community characteristics such as mobility, access to amenities, community safety, environmental health, and social support systems. The survey was available in paper and online formats across the region. Paper copies were distributed in a variety of locations throughout communities and the online link was shared via the Our Cowichan website, Our Cowichan weekly newsletter, local newspapers and radio, CBC radio, and electronically via the network's organizations and colleagues. A copy of the survey questionnaire is available in Appendix A to this report.

In total, 651 responses were received. Survey participation was voluntary; therefore respondents are not necessarily representative of the Cowichan Valley population. Compared to the distribution of the population according to the 2011 Census, survey respondents were more likely to be from the City of Duncan, and less likely to be from Southern and Northern Electoral areas and from First Nations communities. As the majority of survey respondents were females aged 50 years and above, men and younger age groups are also under-represented. Survey results should be interpreted with this in mind, as results represent the situations, thoughts and perceptions of this particular group of respondents. The following provides an overview of the characteristics of survey respondents:

- The majority of respondents were female (82%);
- Almost two-thirds (65%) of respondents were over the age of 50;
- Respondents were more likely to live in North Cowichan (41%) or City of Duncan (18%) than any of the other areas;
- The majority of respondents considered themselves to be either Caucasian (84%) or Aboriginal (7%); and,

- Nearly 90% of respondents considered their physical and mental health to be 'good,' 'very good,' or 'excellent.'

Figure 1: Gender of Survey Respondents

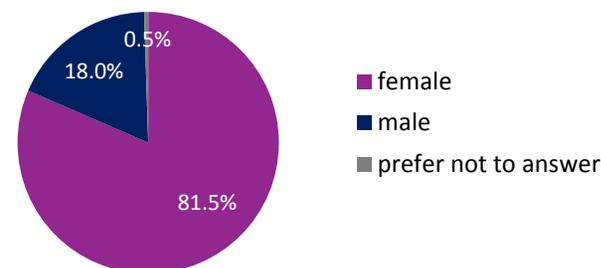


Figure 2: Age of Survey Respondents

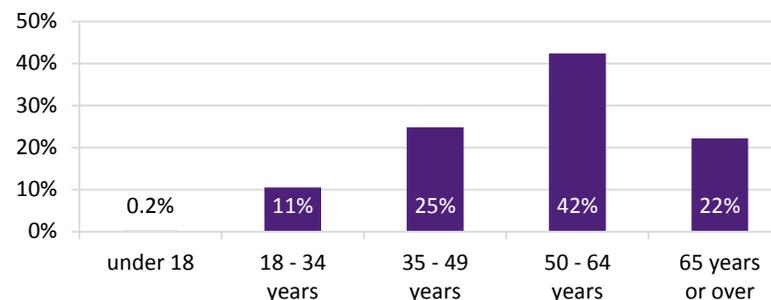
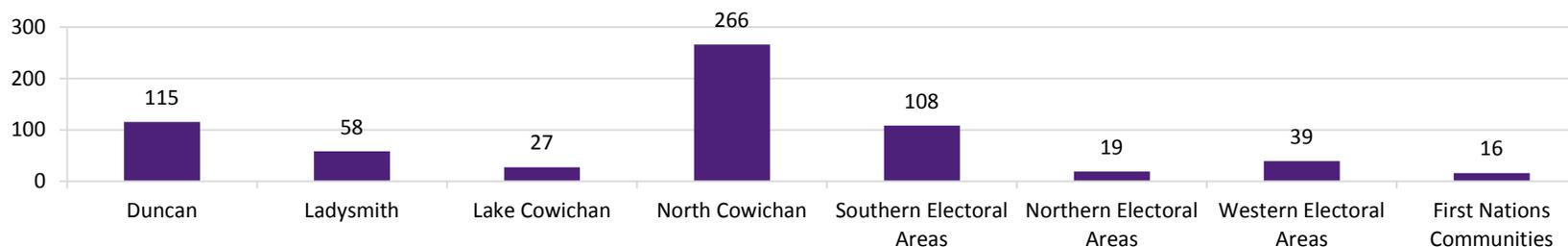


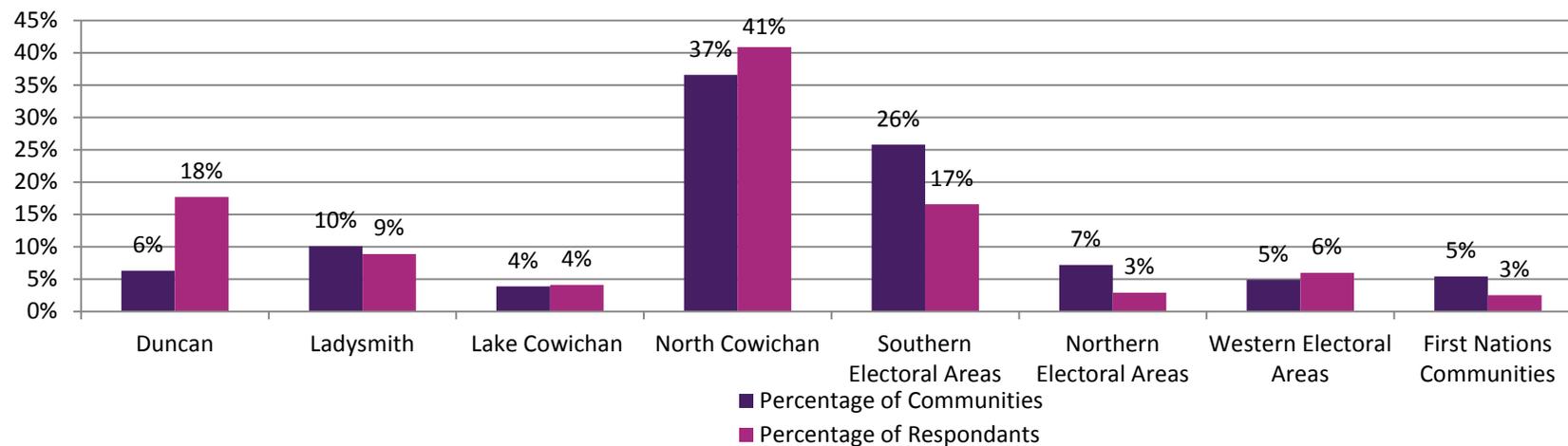
Figure 3: Location of Cowichan Community Health Survey Respondents



Source: Cowichan Community Health Survey, 2014.

Note: the totals in the graph above add up to 648 instead of 651 as some respondents chose not to provide their location.

Figure 4: Comparison of Percentage of Population versus Percentage of Respondents



Geography

Our Cowichan Communities Health Network lies solely within the boundary of the CVRD, and covers twenty-nine census subdivisions (see map on the following page). As this report is designed for use by a wide range of users, the emphasis is on making information as accessible as possible through the use of charts and figures. Census data were combined for smaller communities (“Northern Electoral

Areas,” “Western Electoral Areas,” and “Southern Electoral Areas”) as well as First Nations communities, as shown in the table below. Depending on the type of data presented in each figure or chart, results for these groups are provided as a sum or average of the available data from the communities that make up the group.

Table 1: Census Subdivisions and Groupings

Group Name	Census Subdivisions
Duncan	<ul style="list-style-type: none"> City of Duncan
Ladysmith	<ul style="list-style-type: none"> Town of Ladysmith
Lake Cowichan	<ul style="list-style-type: none"> Town of Lake Cowichan
North Cowichan	<ul style="list-style-type: none"> District Municipality of North Cowichan
Southern Electoral Areas	<ul style="list-style-type: none"> Mill Bay/ Malahat Area A Shawnigan Lake Area B Cobble Hill Area C Cowichan Bay Area D
Western Electoral Areas	<ul style="list-style-type: none"> Sahtlam/ Glenora/ Cowichan Station Area E Cowichan Lake South / Skutz Falls Area F
Northern Electoral Areas	<ul style="list-style-type: none"> Saltair / Gulf Islands Area G North Oyster/ Diamond Area H Youbou / Meade Creek Area I
First Nations communities	<ul style="list-style-type: none"> Cowichan* Malachan 11 Tsussie 6 Oyster Bay 12 Tzart-Lam 5 Portier Pass 5 Shingle Point 4 Squaw-hay-one 11 Kil-pah-las 3 Est-Patrolas 4 Halalt 2 Chemainus 13 (Stz’uminus) Malahat 11 Cowichan Lake Penelakut 7** Theik 2

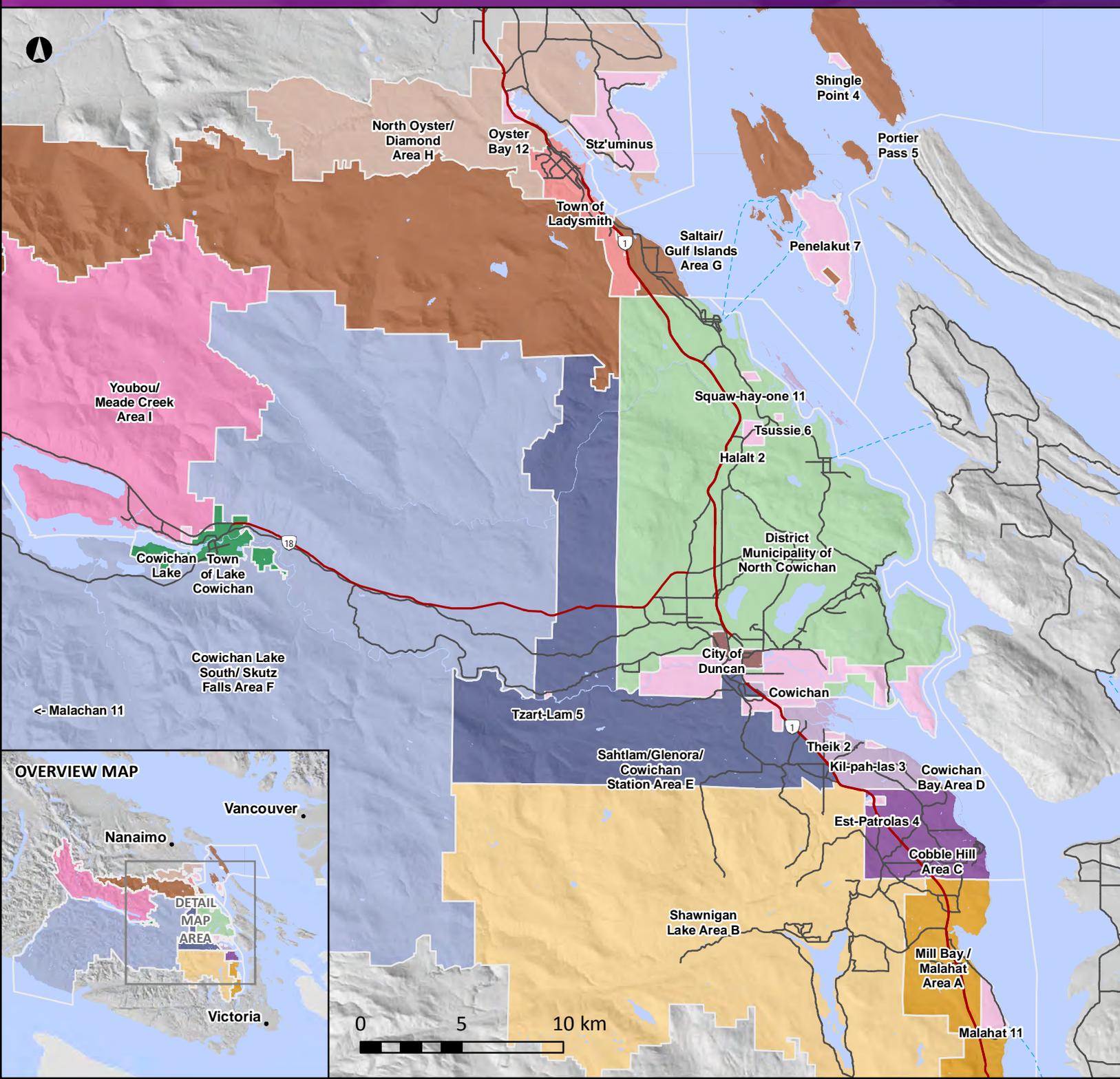
* Subdivision underwent a boundary change between 2001 and 2006, and was referred to as Cowichan 1 in those census years.

** Penelakut 7, formerly named Kuper Island.

CENSUS SUB-DIVISIONS

- Duncan
- Ladysmith
- Lake Cowichan
- North Cowichan
- Mill Bay/ Malahat Area A
- Shawnigan Lake Area B
- Cobble Hill Area C
- Cowichan Bay Area D
- Sahtlam/Glenora/ Cowichan Station Area E
- Cowichan Lake South/ Skutz Falls Area F
- Saltair/ Gulf Islands Area G
- North Oyster/ Diamond Area H
- Youbou/ Meade Creek Area I
- Indian Reserves
- Highway
- Arterial Road
- Ferry

Boundary data from Statistics Canada 2011. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.
Projection: UTM Zone 10 Datum: NAD 83
Date: March 17, 2014



Data for some topics is available only by Health Service Delivery Area, LHA or School District. Their boundaries do not completely correlate with census subdivision boundaries, as provided in the following table and maps.

Data for BC and the Regional District of Nanaimo (RDN), as well as North and South Island Health Service Delivery Areas, has been included for some indicators to provide a basis for comparison with that obtained for Cowichan.

Table 2: Health Service Delivery Areas, Local Health Areas and School Districts

Health Service Delivery Area	Local Health Areas		
Central Vancouver Island	<ul style="list-style-type: none"> ▪ Cowichan LHA ▪ Ladysmith LHA ▪ Lake Cowichan LHA 	<i>Also includes the following LHAs not in the CVRD:</i>	<ul style="list-style-type: none"> ▪ Nanaimo LHA ▪ Alberni LHA ▪ Qualicum LHA
Local Health Area	Cowichan Valley Communities		
Cowichan LHA	<ul style="list-style-type: none"> ▪ City of Duncan ▪ Mill Bay/ Malahat Area A 	<ul style="list-style-type: none"> ▪ Shawnigan Lake Area B ▪ Cobble Hill Area C 	<ul style="list-style-type: none"> ▪ Cowichan Bay Area D ▪ Sahtlam / Glenora / Cowichan Station Area E
Ladysmith LHA	<ul style="list-style-type: none"> ▪ Town of Ladysmith ▪ Stz'uminus (Chemainus) 	<ul style="list-style-type: none"> ▪ North Oyster/ Diamond Area H 	<ul style="list-style-type: none"> ▪ Saltair / Gulf Islands Area G
Lake Cowichan LHA	<ul style="list-style-type: none"> ▪ Town of Lake Cowichan 	<ul style="list-style-type: none"> ▪ Youbou / Meade Creek Area I 	<ul style="list-style-type: none"> ▪ Cowichan Lake South / Skutz Falls Area F
School District	Cowichan Valley Communities		
Cowichan Valley School District	<ul style="list-style-type: none"> ▪ City of Duncan ▪ Town of Lake Cowichan ▪ District Municipality of North Cowichan ▪ Mill Bay / Malahat Area A 	<ul style="list-style-type: none"> ▪ Shawnigan Lake Area B ▪ Cobble Hill Area C ▪ Cowichan Bay Area D ▪ Sahtlam / Glenora / Cowichan Station Area E 	<ul style="list-style-type: none"> ▪ Cowichan Lake South / Skutz Falls Area F ▪ Saltair / Gulf Islands Area G ▪ Youbou / Meade Creek Area I
Nanaimo-Ladysmith School District	<ul style="list-style-type: none"> ▪ Town of Ladysmith 	<ul style="list-style-type: none"> ▪ Saltair / Gulf Islands Area G (North) 	<ul style="list-style-type: none"> ▪ North Oyster/ Diamond Area H

VANCOUVER ISLAND HEALTH AREAS

-  Island Health Boundary
-  Health Service Delivery Area Boundary
-  Local Health Area Boundary
-  Cowichan Valley Local Health Areas
-  Highway
-  Ferry

Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.

Projection: UTM Zone 10 Datum: NAD 83
Date: May 1, 2014

LOCAL HEALTH AREAS AREAS

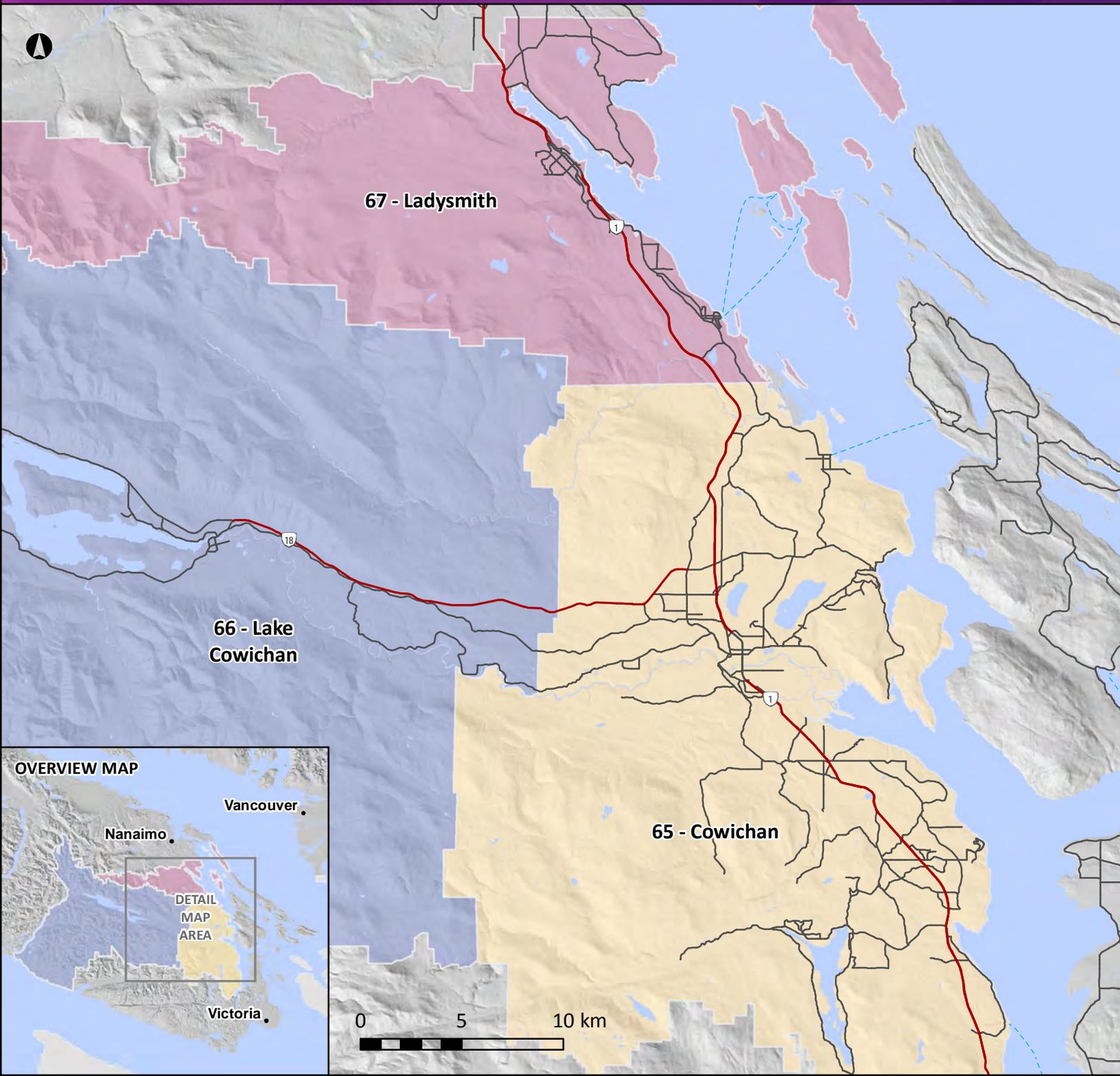


HEALTH SERVICE DELIVERY AREAS



LOCAL HEALTH AREAS

- 65 - Cowichan
- 66 - Lake Cowichan
- 67 - Ladysmith
- Highway
- Arterial Road
- Ferry



Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.

Projection: UTM Zone 10 Datum: NAD 83
Date: March 17, 2014

Explanation of Geography and Census Data

While the information in this health profile represents the available data, there are differences in census survey participation and reporting by census year for the Electoral Areas and First Nation Communities groupings because of data suppression¹ for some small communities and census survey non-participation by some First Nation communities. Nevertheless the groupings of communities created for this project are aggregations of communities and settlements and the presented results should be interpreted as representative for the aggregate and not any one community or settlement within a grouping. Communities or settlements that are not included (due to unavailable data) are noted by census or survey year in Table 3.

Notes:

- A significant exclusion that should be noted is the Western Electoral Areas in 2010/2011. As the 2011 National Household Survey did not publish data for the Cowichan Lake South / Skutz Falls Area F (one of two communities that make up this Electoral Area grouping), data have only been reported for 2001 and 2006 for this Electoral Area grouping, except for data that was available through the 2011 Census of Canada (i.e., family structures).
- In 2011, the National Household Survey (NHS) provided more data for this report than the 2011 Census. Total population data were sourced from the 2011 Census however.
- Population data was suppressed for Chemainus 13 (Stz'uminus) in 2006 although other data was published (and is included in this report). To provide an estimate of the total

population reported on for First Nations communities in 2006, a population of 685 was applied for Chemainus 13 (Stz'uminus) - the number of persons in private households (20% sample data) in 2006, as this was the best available data.

¹ Data suppression means data is not reported when the population is too small to ensure the anonymity of individuals.

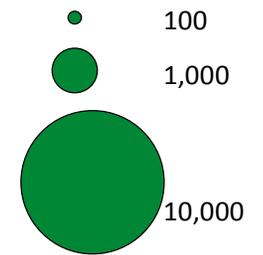
Table 3: Community or settlement populations included in the Census of Canada and National Household Survey by census year

Grouping	Excluded Census Subdivisions (2001 census)	Included Population (2001 census)	Excluded Census Subdivisions (2006 census)	Included Population (2006 census)	Excluded Census Subdivisions (2011 Census)	Excluded Census Subdivisions (2011 NHS)	Included Population (2011 NHS)
Duncan	None	4,699	None	4,699	None	None	4,932
Ladysmith	None	6,587	None	6,811	None	None	7,921
North Cowichan	None	26,148	None	27,557	None	None	28,807
Lake Cowichan	None	2,827	None	2,948	None	None	2,974
Southern Electoral Areas	None	17,731	None	18,988	None	None	20,287
Western Electoral Areas	None	5,568	None	5,622	None	Cowichan Lake South / Skutz Falls Area F	3,854
Northern Electoral Areas	None	5,757	None	5,699	None	None	5,664
First Nations communities	Tzart-Lam 5, Portier Pass 5, Shingle Point 4, Kil-pah-las 3, Est-Patrolas 4, Cowichan Lake, Theik 2	2,617	Tzart-Lam 5, Portier Pass 5, Shingle Point 4, Squaw-hay-one 11, Kil-pah-las 3, Est-Patrolas 4, Cowichan Lake, Penelakut 7, Cowichan	3,092	Tzart-Lam 5, Portier Pass 5, Shingle Point 4, Kil-pah-las 3, Cowichan Lake, Theik 2	Tzart-Lam 5, Portier Pass 5, Shingle Point 4, Kil-pah-las 3, Est-Patrolas 4, Cowichan Lake, Theik 2	4,244

Source: Statistics Canada, 2013a, 2012a, 2007a, 2002a.

TOTAL POPULATION

POPULATION IN 2011 BY CENSUS SUB-DIVISION



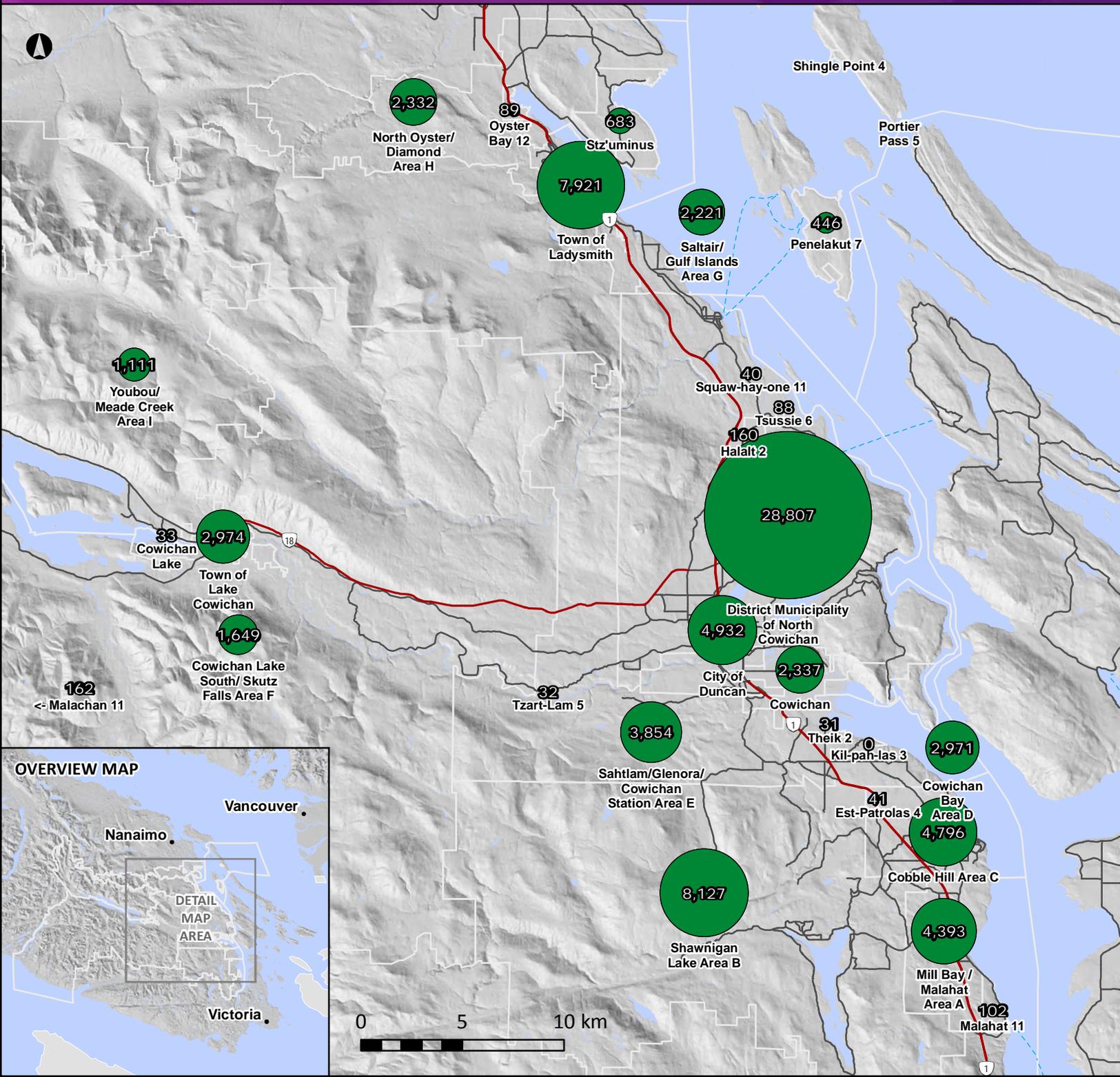
REGIONAL COMPARISONS

C.V.R.D.: 80,330

R.D.N.: 146,574

B.C.: 4,400,057

Statistical Data from Statistics Canada 2011 Census of Population. Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.
Projection: UTM Zone 10 Datum: NAD 83
Date: May 1, 2014



Explanation of Geography and Aboriginal Profiles

As with the Census of Population, information provided through the Statistics Canada Aboriginal Profiles was not always available. Data for certain communities was suppressed in

certain years or there was non-participation. Communities or settlements that are not included (due to unavailable data) are noted by census or survey year in Table 4.

Table 4: Community or settlement populations included in the Aboriginal Profiles by census year

Grouping	Excluded Census Subdivisions (2001 Aboriginal Profile)	Included Population (2001 Aboriginal Profile)	Excluded Census Subdivisions (2006 Aboriginal Profile)	Included Population (2006 Aboriginal Profile)	Excluded Census Subdivisions (2011 Aboriginal Profile)	Included Population (2011 Aboriginal Profile)
Duncan	None	735	None	525	None	480
Ladysmith	None	325	None	310	None	440
North Cowichan	None	1,570	None	1,880	None	1,980
Lake Cowichan	Not reported – data unavailable for some or all communities in one or more census years					
Southern Electoral Areas						
Western Electoral Areas						
Northern Electoral Areas						
First Nations communities	Malachan 11, Tsussie 6, Oyster Bay 12, Tzart-Lam 5, Portier Pass 5, Shingle Point 4, Squaw-hay-one 11, Kil-pah-las 3, Est-Patrolas 4, Halalt 2, Malahat 11, Cowichan Lake, Theik 2	2,020	Malachan 11, Tsussie 6, Oyster Bay 12, Tzart-Lam 5, Portier Pass 5, Shingle Point 4, Squaw-hay-one 11, Kil-pah-las 3, Est-Patrolas 4, Halalt 2, Malahat 11, Cowichan Lake, Theik 2, Penelakut 7	2,410	Malachan 11, Tsussie 6, Oyster Bay 12, Tzart-Lam 5, Portier Pass 5, Shingle Point 4, Squaw-hay-one 11, Kil-pah-las 3, Est-Patrolas 4, Halalt 2, Malahat 11, Cowichan Lake, Theik 2	2,260

Source: Statistics Canada 2013b, 2007b, 2002b.

Population

Demographics

The CVRD has a population of 80,325 (Statistics Canada, 2012a). As the figures below illustrate, the largest demographic group in the Cowichan region is the 45 – 64 year age range. While the

aging baby-boomer trend is similar to that of the province, the CVRD’s proportion of young adults (20 – 39 year age range) is quite low in comparison.

Figure 5: BC Age and Gender Distribution (2011)

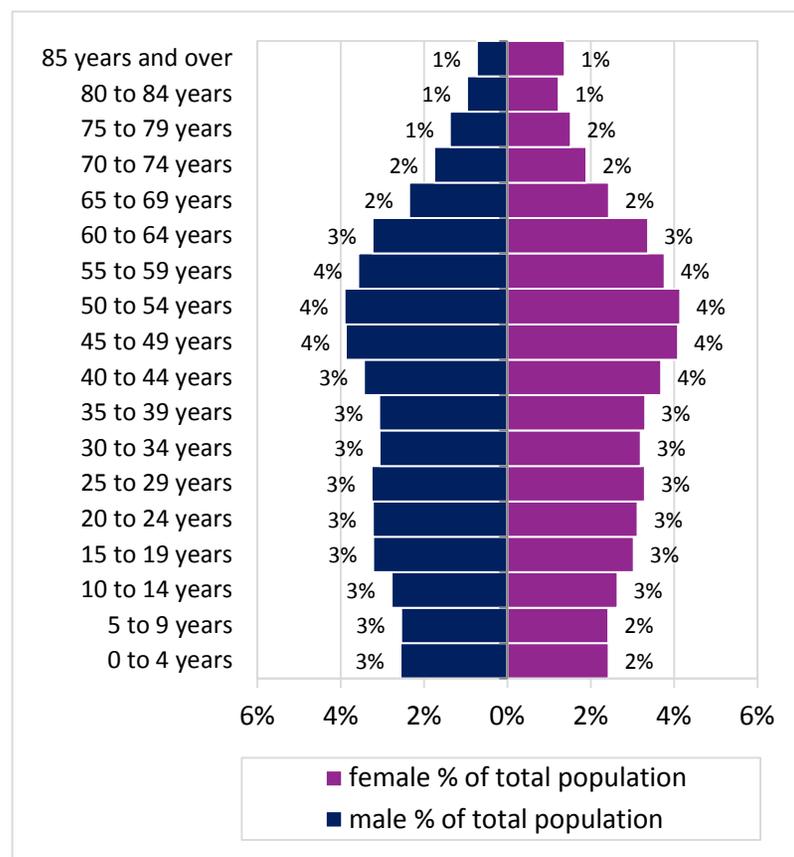
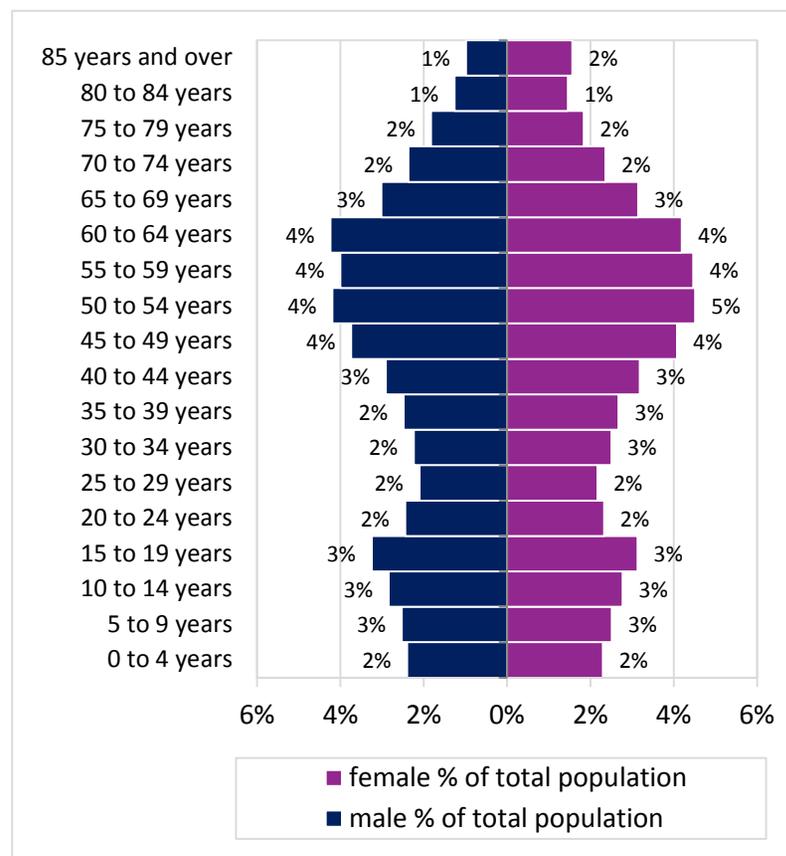


Figure 6: Cowichan Valley Age and Gender Distribution (2011)



Language

The most common mother tongue languages spoken in the Cowichan region are English, German, French, Dutch, and Panjabi (Punjabi). There are also a number of individuals (570) who speak multiple languages. However, the vast majority of people in the region speak English. Responses from the community survey suggest that language barriers are not a significant issue for the region (0.3% of respondents noted this as a barrier to services for health and or well-being). However, it should be noted that the survey was only available in English.

There are only five individuals listed in the 2011 census who speak an Aboriginal language as their mother tongue (Cree). This is not to say that other individuals do not speak different languages, but they did not learn these languages as their mother tongue. Additional information on the use of traditional First Nations languages is provided under Key Determinant 12: Culture.

Table 5: Mother Tongue Languages in the Cowichan Valley

Mother tongue language (the first language that an individual learns at home)	Number of people who speak the language as their mother tongue	% of total population who speaks the language as their mother tongue
English	72,795	90.6%
German	1,085	1.4%
French	1,020	1.3%
Dutch	695	0.9%
Panjabi (Punjabi)	630	0.8%

Source: Calculated from Statistics Canada 2013a.

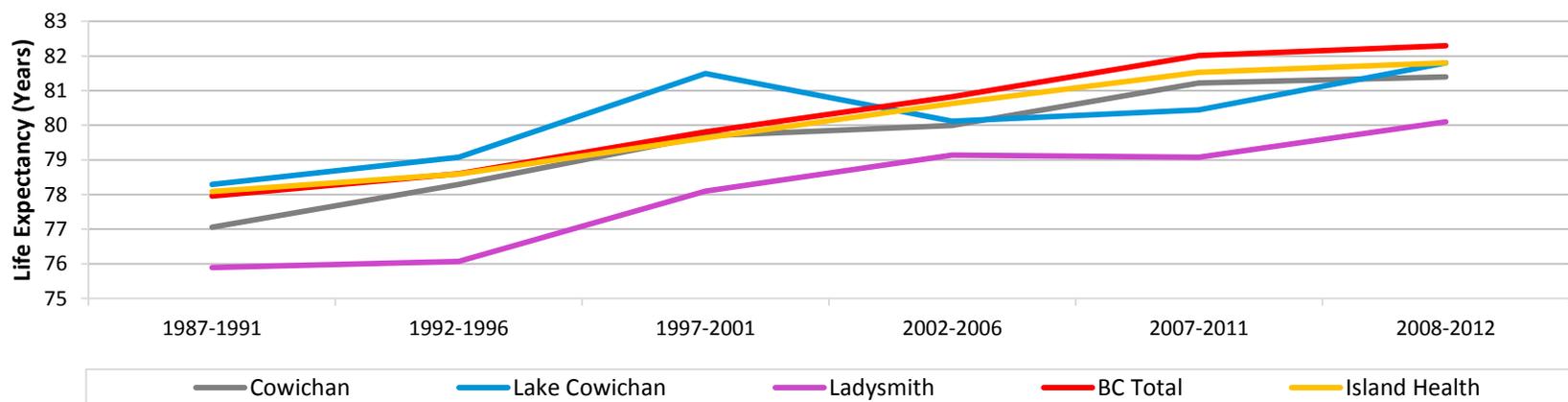
Current Health Status

Overview of Regional Health

Cowichan Valley residents are a relatively healthy population. The life expectancy for the three LHAs that make up the Valley are comparable to the overall life expectancy of the Island (81.8 years) and the Province (82 years), the latter of which is the highest life expectancy in Canada (See data tables in following pages). When looking to specific types of health indicators, such as healthy behaviors, chronic disease, child health and mortality, there is some variation in health status.

For example, while infant mortality is relatively low, the rates of teen mothers, preterm births and low birth weight babies are all higher than Island Health region as a whole. Similarly, while certain health behaviors – such as childhood immunizations and breastfeeding practices – are comparable or better than the Island Health region. On the other hand others, such as alcohol and tobacco use, could be improved.

Figure 7: Life expectancy of Cowichan Valley residents compared to Island Health and BC (1987 – 1991 to 2008 – 2012)



From the Canadian Community Health Survey residents of Central Island-- which includes Cowichan Valley, Nanaimo, Qualicum and Alberni-- report similar levels of perceived good or excellent physical and mental health compared to Island Health and the Province, and similar levels of healthy behaviors such as

consumption of fruit and vegetables and moderate or active leisure time physical activity. Similar to Island Health, the top five chronic diseases seen in Cowichan Valley are: depression/anxiety, hypertension, asthma, osteoarthritis and chronic obstructive pulmonary disease (COPD). The proportions

of the population ever diagnosed with depression/anxiety, hypertension and COPD are slightly higher in Cowichan Valley compared to the Island as a whole, with Ladysmith in particular having a consistently higher prevalence. It is important to note that this is a crude prevalence rate, and as such indicates the overall burden of the disease in the population without taking into account the age distribution of the population.

With respect to infant and child health, Cowichan Valley has some variation both across the LHAs and across different types of indicators. Overall, the region has a lower infant mortality rate, similar childhood immunization rates and higher rates of exclusive breastfeeding as compared to Island Health. However, the rate of low birth weight babies, preterm births and stillbirths is higher in the region. There is also a higher rate of teen mothers and a higher proportion of women who report smoking during their current pregnancy, with the exception of Ladysmith, which has a lower rate of smoking than the combined Cowichan valley LHAs and Island Health. Child hospitalization rates for respiratory disease and for injury or poisonings are comparable between Ladysmith and Island Health, and are lower in Lake Cowichan for respiratory diseases. Rates of child hospitalizations for injury/poisonings are higher in Cowichan and Lake Cowichan compared to Island Health, and rates of child hospitalizations are also higher in Cowichan for respiratory diseases. The Early Development Index – a measure of early childhood development – indicates the estimated proportion of pre-school children who are vulnerable in a particular area. Cowichan Valley overall had a slightly higher proportion of children indicated as vulnerable for physical development – 19% compared to 17% for Island Health. Notably, however, the Lake Cowichan LHA had a growing and higher proportion at 24%.

Alcohol and tobacco can have a large impact on the health of a population. Hospitalizations related to alcohol and tobacco use are one way to measure this impact. Cowichan Valley has a higher rate of alcohol-related hospitalizations than Island Health, and both have shown an increase over the past few years. The region also has a higher rate of tobacco-related hospitalizations than Island Health; however, in this case the rates have shown a decline over the past decade. Alcohol-related mortality in Cowichan Valley is similar to Island Health, but both are significantly higher than the Province; whereas tobacco-related mortality is only significantly higher in Ladysmith.

Overall age-adjusted mortality rates in the Cowichan Valley region are similar to Island Health with the exception of Ladysmith. However, all three LHAs in the region have higher person years of life lost. This latter measure is a way of giving more weight to deaths that occur in younger people. So, while the mortality rate may be similar, more deaths are occurring among younger people. Leading causes of mortality in the region vary by LHA. In Cowichan, suicide and alcohol-related deaths are the only two causes of death that are significantly higher than expected when comparing to BC. In Lake Cowichan, the smaller population size makes it difficult to determine significant differences; however, deaths due to pneumonia/influenza and deaths due to cerebrovascular disease/stroke are both higher than expected. Ladysmith has a higher than expected number of deaths from several causes, including circulatory system, alcohol, tobacco, cancer, heart disease (disease of the arteries, arterioles and capillaries), lung cancer, ischemic heart disease and cerebrovascular disease/stroke.

Table 6: Mortality, morbidity, and health statistics by Local Health Area

Topic	Indicator <small>*indicates positive † indicates negative</small>	Cowichan (LHA 65)	Lake Cowichan (LHA 66)	Ladysmith (LHA 67)	Cowichan Valley (LHAs 65-67)	Central Island† (LHA 65-70)	Island Health
Health Behaviours	Perceived health, % very good or excellent ²	--	--	--	--	59.7	61.6
	Perceived mental health, % very good or excellent ²	--	--	--	--	72.1	70.5
	Smoking status, % current smoker, daily or occasional ²	--	--	--	--	20.4*	16.2
	Consumption of fruit and vegetables, % >=5 times per day ²	--	--	--	--	43.7	47.0
	Leisure time physical activity, % moderate or active ²	--	--	--	--	65.8	66.3
	Breastfeeding, % of mothers initiating ²	--	--	--	--	100.0	100.0
	Breastfeeding, % exclusive >=6mos ²	--	--	--	--	70.9*	51.4
	Childhood Immunizations, % complete minus boosters at age 2 years ³	76	67	84	77	--	78
	Alcohol-related hospitalizations per 100,000 ⁴	596.99	473.04	530.61	--	--	503.93
	Tobacco-related hospitalizations per 100,000 ⁴	596.66	525.34	488.24	--	--	474.15

² Statistics Canada CANSIM Tables: Canadian Community Health Survey Health Profile, 2012

³ Public Health Program, Island Health, 2012

⁴ Centre for Addictions Research BC, 2011

Topic	Indicator <small>*indicates positive †indicates negative</small>	Cowichan (LHA 65)	Lake Cowichan (LHA 66)	Ladysmith (LHA 67)	Cowichan Valley (LHAs 65-67)	Central Island‡ (LHA 65-70)	Island Health
Maternal and Child Health Indicators	Preterm births, per 1,000 live births ⁵	93.9	79.6	85.4	91.4		76.3
	Low birth weight, per 1,000 live births ⁵	57.8	54.7	60.2	58.1		50.8
	Respiratory diseases hospitalizations per 1,000 children aged 0-14 ⁶	18.1	5.6	11.2	--	--	10.7
	Injury and poisoning hospitalizations, per 1,000 children aged 0-14 ⁶	7.6	9.0	4.7	--	--	5.3
	Caesarean section rate, per 1,000 live births ⁵	233.8	258.71	229.69	234.37	--	296.0
	Elderly gravida, per 1,000 live births ⁵	167.53	134.33	130.25	158.36	--	201.5
	Teen mother, births to mothers aged 15-19 per 1,000 live births ⁵	67.75	59.7	64.43	66.65	--	43.0
	Maternal smoking, % reporting smoking during current pregnancy ⁷	14.6	21.5	11.8	14.4	--	12.7
	Preschool physical development vulnerability, % ⁸	19	24	17	19	--	17
Chronic Disease ⁹	Depression/Anxiety, % ever diagnosed	28.4	25.3	31.0	28.8	--	26.6
	Hypertension, % ever diagnosed	27.9	27.0	31.2	28.6	--	26.3
	Asthma, % ever diagnosed	11.5	9.5	13.1	11.6	--	11.1
	Osteoarthritis, % ever diagnosed	11.1	11.0	13.7	11.7	--	10.5
	Chronic Obstructive Pulmonary Disease, % ever diagnosed	8.7	8.8	7.2	8.3	--	5.7

⁵ BC Vital Statistics Annual Report, 2007-2011

⁶ BC Statistics Agency, 2012 Socioeconomic Profile (Child hospitalization rates: Ministry of Health, 2011-2012; Life Expectancy: BC Statistics Agency, 2008-2012; Illicit Drug Deaths: BC Vital Statistics Agency, 2008-2012)

⁷ Perinatal Services BC, 2008-2012

⁸ Human Early Learning Partnership: EDI, 2011-2013

⁹ BC Ministry of Health Services Primary Health Care Chronic Disease Registries 2010/11; these rates are not age-standardized.

Topic	Indicator <small>*indicates positive *indicates negative</small>	Cowichan (LHA 65)	Lake Cowichan (LHA 66)	Ladysmith (LHA 67)	Cowichan Valley (LHAs 65-67)	Central Island‡ (LHA 65-70)	Island Health	
Mortality	Life Expectancy at Birth, age in years ⁶	81.4	81.8	80.1	--	--	81.8	
	Age-standardized Mortality Rate, per 10,000 ¹⁰	47.7	53.6	61.1	--	g--	49.0	
	Potential Years of Life Lost, age-adjusted rate per 1,000 ¹⁰	48.1	66.6	59.2	--	--	43.8	
	Illicit Drug Deaths per 100,000 ⁶	3.88	--	2.97	--	--	8.5	
	Standardized Mortality Ratios by Cause⁵ (compared to BC population)†:							
	Illicit Drug Deaths	0.76	0.98	0.46	--	--	1.14*	
	Deaths from medically treatable diseases	0.91	0.83	1.13	--	--	0.93	
	Circulatory system	0.98	1.24	1.33*	--	--	1.03*	
	Digestive system	1.15	1.38	1.25	--	--	1.08*	
	Alcohol related deaths	1.40*	1.38	1.33*	--	--	1.31*	
	Tobacco related deaths	1.03	1.18	1.21*	--	--	1.02	
	Falls	0.81	1.00	1.32	--	--	1.19*	
	Cancer	1.07	1.00	1.20*	--	--	1.06*	
	Respiratory	0.97	1.09	1.10	--	--	0.93*	
	Suicide	1.48*	0.58	1.39	--	--	1.19*	
	Motor vehicle crash mortality rate	1.32	1.26	1.28	--	--	0.92	
	End/nut/met diseases	1.04	1.02	1.25	--	--	1.01	
	Diabetes	1.13	1.00	1.18	--	--	1.01	
	Arteries/Arterioles/Capillaries	1.35	0.68	1.81*	--	--	1.02	
	Pneumonia and influenza	0.87	2.00*	1.15	--	--	0.83*	
Lung cancer	1.01	1.42	1.30*	--	--	1.04		
Ischemic heart disease	0.95	1.12	1.26*	--	--	0.99		

¹⁰ BC Vital Statistics, 2009-2011

Topic	Indicator <small>*indicates positive *indicates negative</small>	Cowichan (LHA 65)	Lake Cowichan (LHA 66)	Ladysmith (LHA 67)	Cowichan Valley (LHAs 65-67)	Central Island‡ (LHA 65-70)	Island Health
	Chronic lung disease	1.06	0.50	1.06	--	--	0.99
	Cerebrovascular diseases/stroke	0.94	1.69*	1.35*	--	--	1.03
Infant Mortality	Infant Mortality per 1,000 live births ⁵	3.7	--	--	3.3	--	4.4
	Stillbirths per 1,000 live births ⁵	11.3	--	9.7	11.3	--	8.7

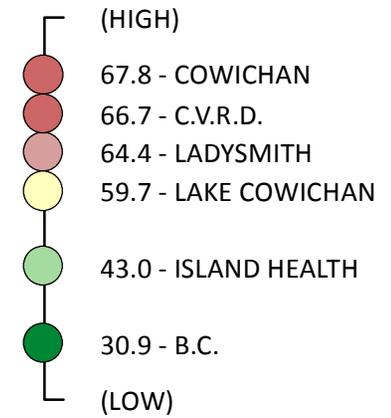
**Significantly different from BC value – only relevant for CCHS (Canadian Community Health Survey) Indicators and SMRs (Standardized Mortality Ratios); green indicates positive (better than) direction, red indicates negative (worse than) direction*

†Standardized mortality ratio is the number of observed deaths over the number of expected deaths if the age-specific mortality rate was equivalent to BC; 1.0 indicates no difference, >1.0 indicates more than expected deaths, and <1.0 indicates less than expected deaths.

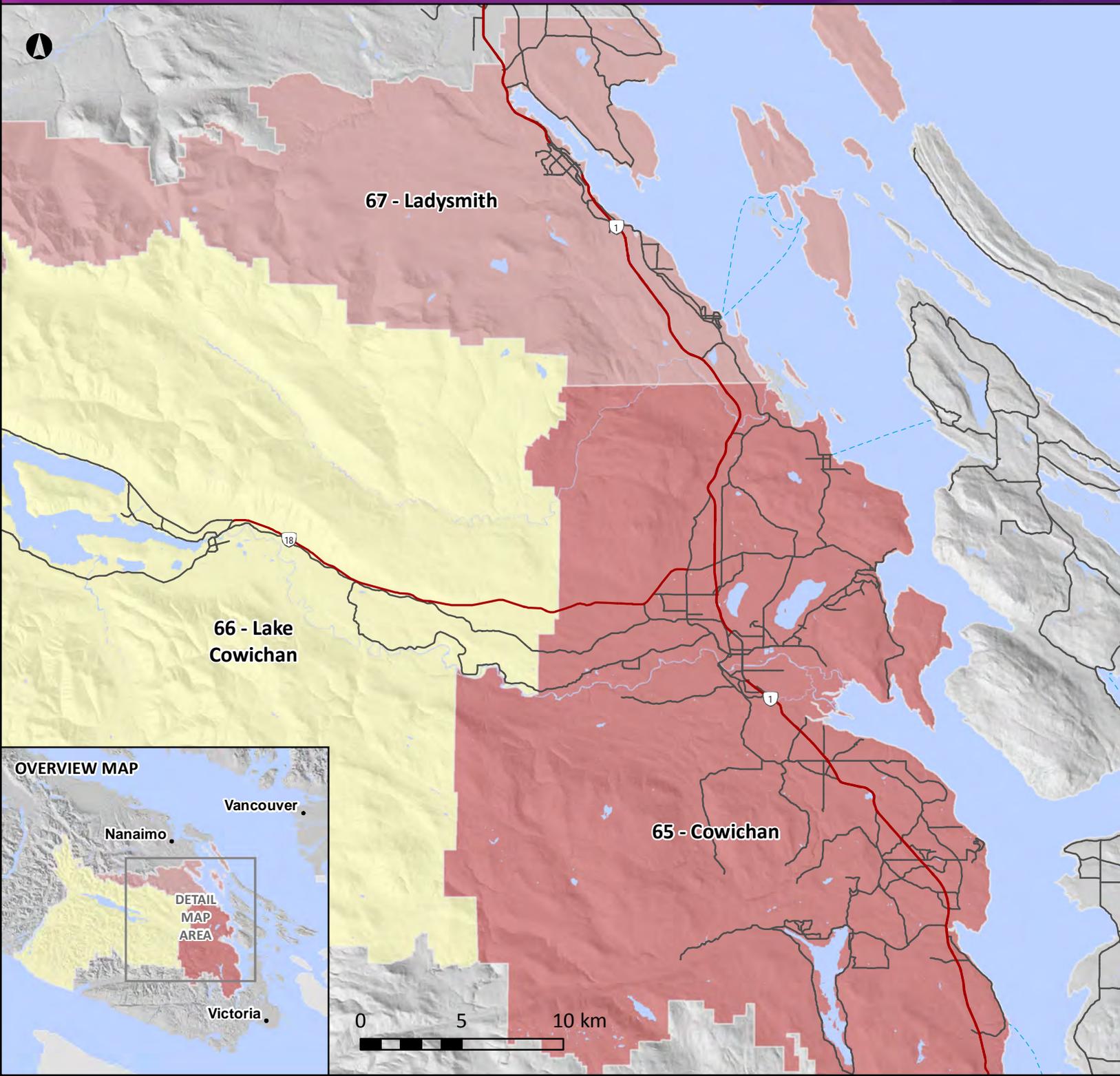
‡Central Island Health Service Delivery Area includes LHA 68 (Nanaimo), LHA 69 (Qualicum) and LHA 70 (Alberni)

TEEN MOTHERS

RATE OF BIRTHS TO WOMEN 15-19 PER 1,000 LIVE BIRTHS BY LOCAL HEALTH AREA



Statistical data from BC Vital Statistics Agency (2007-2011). Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.
Projection: UTM Zone 10 Datum: NAD 83
Date: May 1, 2014



RESPIRATORY DISEASE HOSPITALIZATIONS

TOTAL PER 1,000 CHILDREN 0-14 IN 2011-2012 BY LOCAL HEALTH AREA

(HIGH)

● 18.1 - COWICHAN

● 11.2 - LADYSMITH

● 10.7 - ISLAND HEALTH

● 9.0 - B.C.

● 5.6 - LAKE COWICHAN

(LOW)

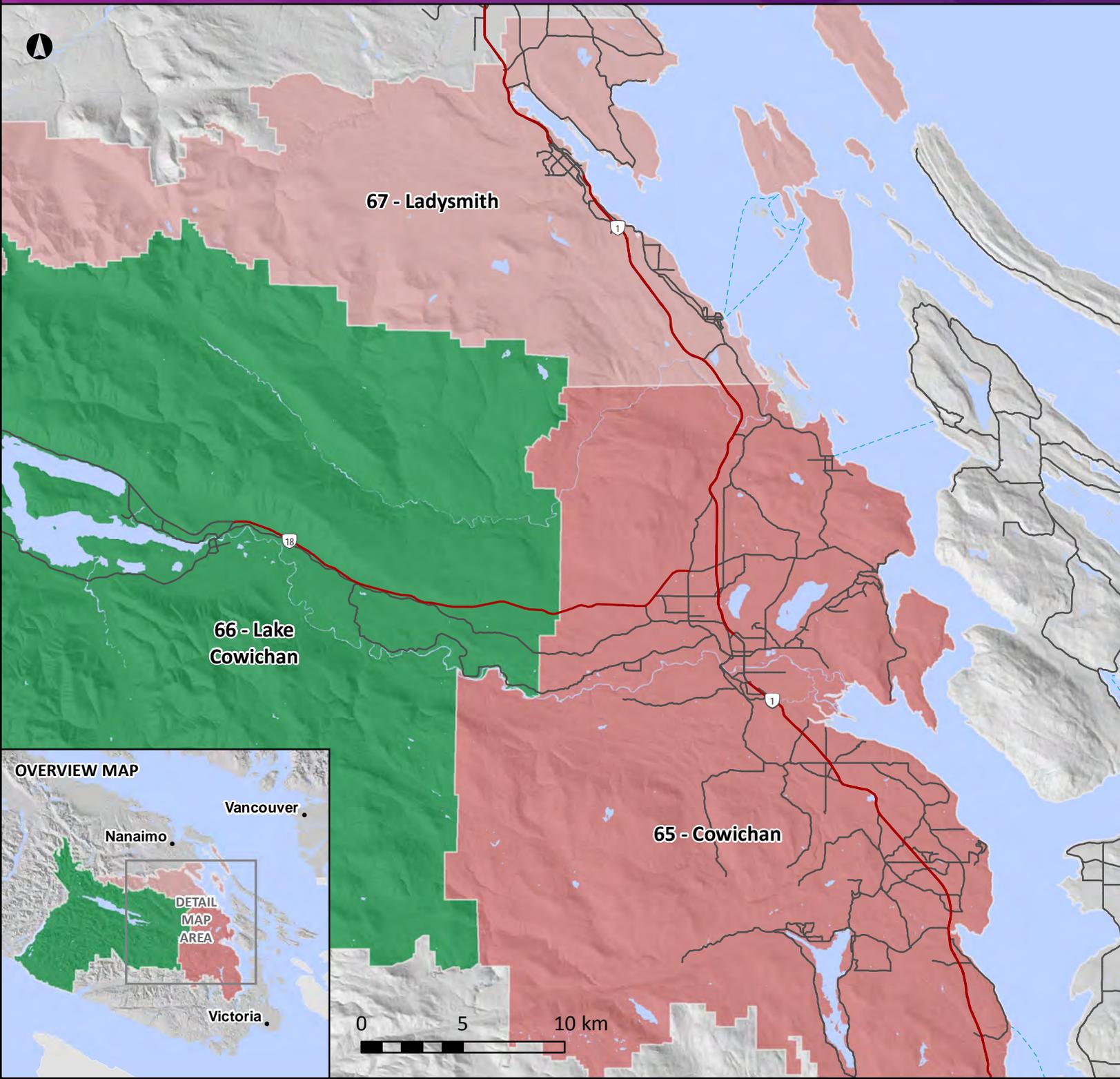
— Highway

— Arterial Road

- - - Ferry

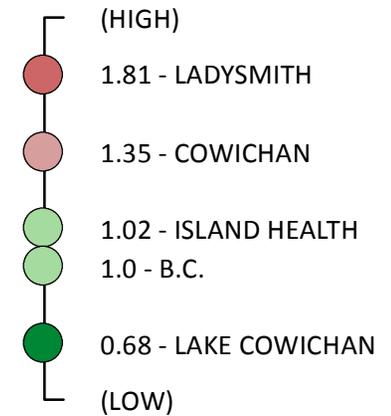
BC Statistics Agency and Ministry of Health (2011-2012). Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.

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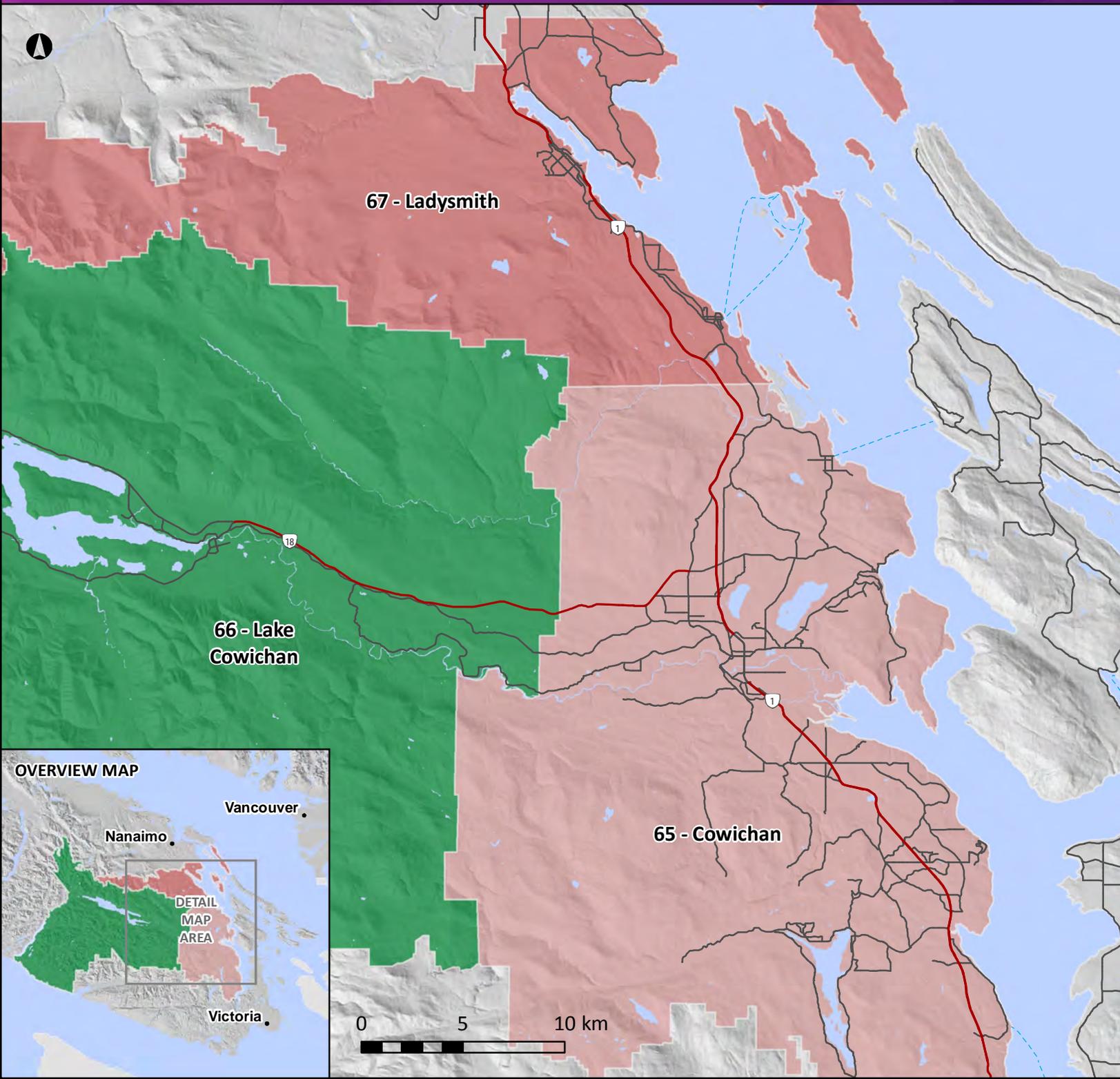


HEART DISEASE

**STANDARDIZED MORTALITY RATIO (SMR) VALUE
2007-2011 AVERAGE BY
LOCAL HEALTH AREA**

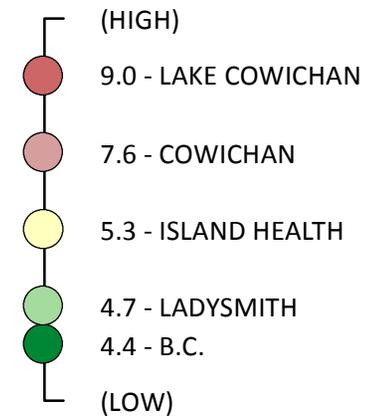


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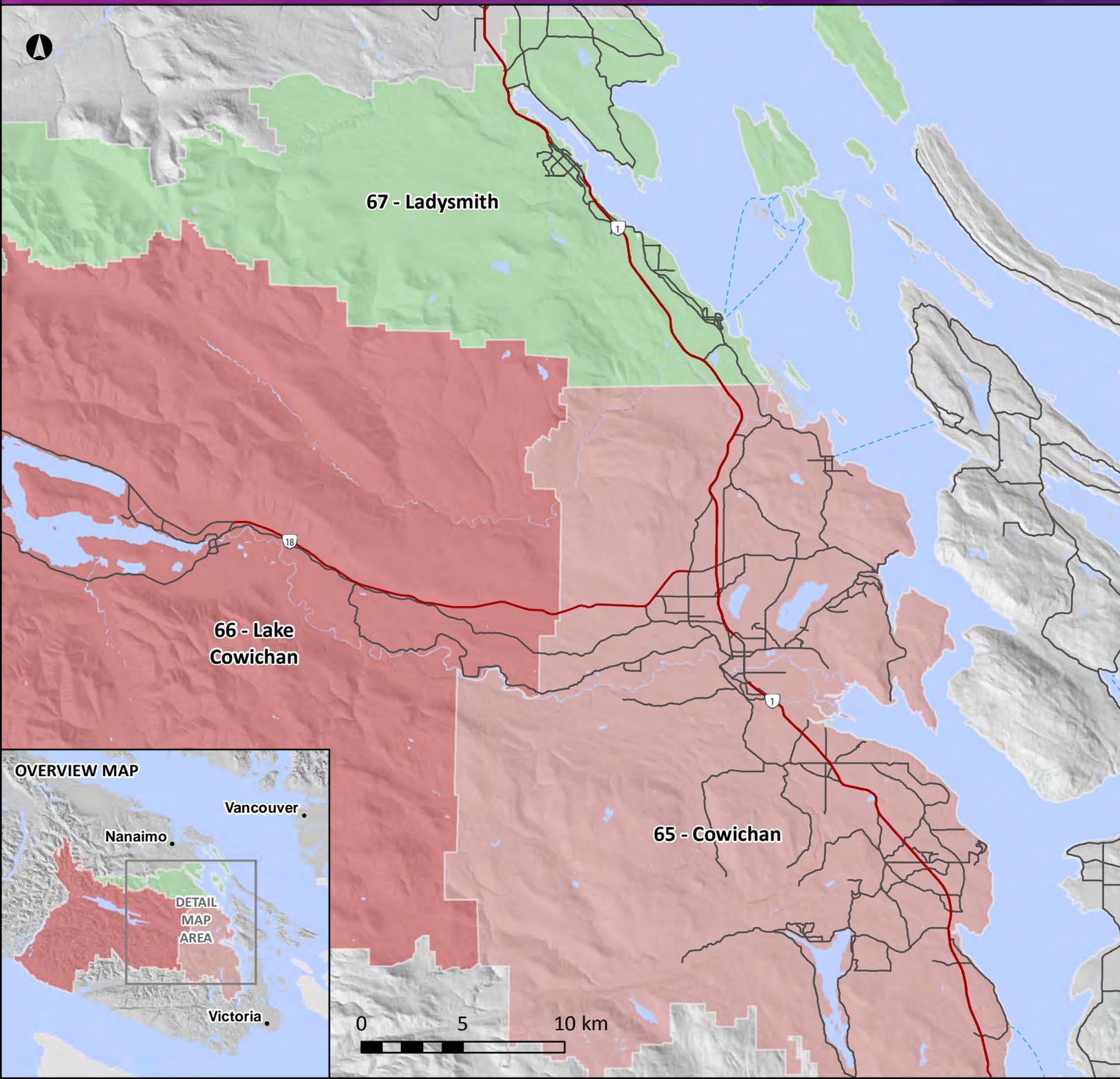
INJURY AND POISONING HOSPITALIZATIONS

TOTAL PER 1,000 CHILDREN 0-14 IN 2011-2012 BY LOCAL HEALTH AREA



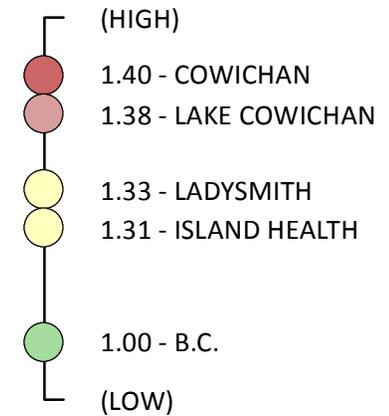
BC Statistics Agency and Ministry of Health (2011-2012). Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.

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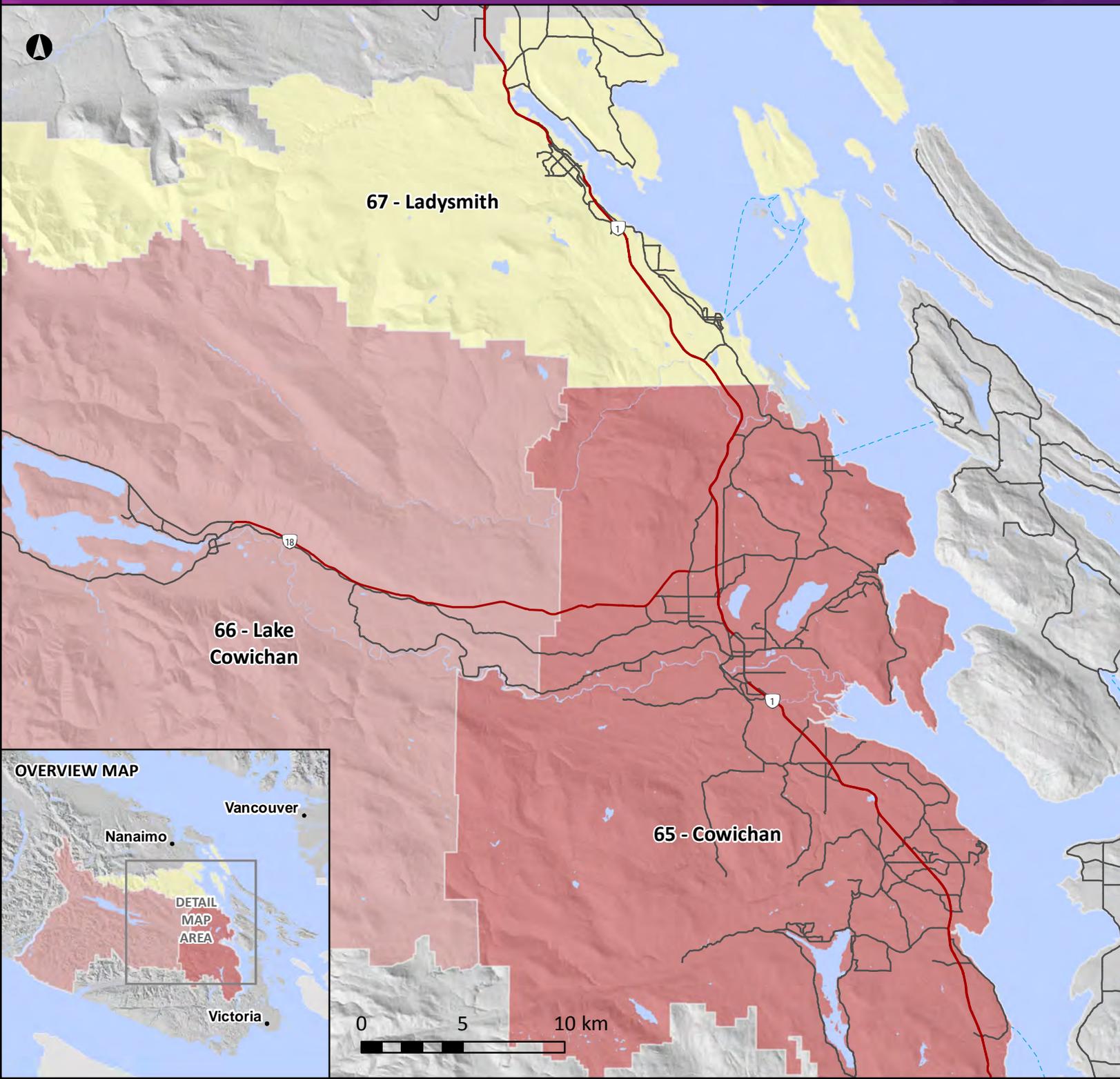


ALCOHOL RELATED DEATHS

STANDARDIZED MORTALITY RATIO (SMR) VALUE 2007-2011 AVERAGE BY LOCAL HEALTH AREA



BC Vital Statistics Annual Report, 2011 (Aggregate 2007-2011). Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.
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12 Key Determinants of Health

The Cowichan Communities Health Profile is based on an analytical framework created by the Public Health Agency of Canada (2013), which outlines 12 Key Determinants of Health. The framework is published in their document “What Makes Canadians Healthy or Unhealthy.”

This framework is used by Island Health and was chosen to provide a more in-depth picture of health in the region. The 12 Key Determinants of Health provides an overview of the standard physical and medical aspects of health, but also a better understanding of other critical factors that contribute to individual and community health and well-being in the Cowichan region.



This section includes a description of each of the 12 Key Determinants and an in depth review of how the Cowichan region fares for each of the determinants. The in depth reviews, organized by the 12 Key Determinants, include a brief description of the significance of the key determinant, expressed in global terms; identifies key findings in bullet point form (text box); includes a table identifying the individual determinants within each “key determinant” field along with a descriptor and relevance to health and well-being. Further, the data collected for each particular determinant are expressed in chart form, organized by sub-regions and Statistics Canada data collection years for comparison. For comparison purposes data from the Regional District of Nanaimo and the Province are also shown.

1. **Income and social status:** Evidence suggests that higher social and economic status leads to better health. A higher income leads to safer housing, better education, appropriate food security and improved access to health care. Studies suggest that the distribution of income in a given society may be a more important determinant of health than the total amount of income earned by society members. Large gaps in income distribution lead to increases in social problems and poorer health among the population as a whole.
2. **Social support networks:** Informal social support from families, communities and friends is associated with better health, as is a provision of formal social care and support. The caring and respect in social relationships can act as a buffer to adverse health events.
3. **Education and literacy:** Effective education, starting in infancy and through adulthood, is a key contributor to health. Education contributes to wealth and health by

equipping people with the skills needed to problem solve and have a sense of control over their lives. It also provides people with the skills needed to get a job and have an income.

4. **Employment and working conditions:** People who have control over their work and who have less stress in their jobs are healthier than those who have stressful, unhealthy or dangerous jobs or who are unemployed.
5. **Social environments:** Social stability, strong social policies, and safe and cohesive communities characterize a supportive society that reduces risks to wellness.
6. **Physical environments:** Contaminants in air, water and food can cause adverse health effects. Additionally, given that over 80% of Canadians live in urbanized areas and spend 90% of their time indoors, we recognize that the built environment including housing, transportation and the design of communities can impact health and safety, including physical activity and mental and social well-being.

A significant body of research points to greater physical activity and improved health for people living in more dense, mixed use neighbourhoods and for people who have access to active forms of transportation (walking, cycling, and transit).

- 7. Personal health practices and coping skills:** Personal life choices can shape an individual's health. A growing body of evidence suggests that these life choices are often shaped by the socioeconomic and physical environments in which people live, work and play.
- 8. Healthy child development:** The culmination of early childhood experiences shapes an individual's health and well-being throughout their lives. The other key determinants of health play a role in healthy child development including access to safe, clean homes, education, nutritious foods and access to medical care.
- 9. Biology and genetic endowment:** The basic biology and genetic make-up of an individual are fundamental in determining health outcomes for an individual and may predispose individuals to particular diseases.
- 10. Health services:** Population health is increased with access to health services, particularly those aimed at prevention and health promotion.
- 11. Gender:** Many health issues are known to be a function of gender-based social status as many health system priorities are influenced by social and cultural attitudes based on gender.
- 12. Culture:** Culture shapes who we are and how we live and therefore influences our health. Some cultural groups may face greater challenges in accessing health care due to various barriers (e.g., stigmatization, stereotyping and a lack of culturally appropriate health care and services).



Key Determinant 1: Income & Social Status

Economic uncertainty negatively affects mental and physical health at the individual, family, and community levels (World Health Organization, 2014a). When economies contract and incomes decline or disappear altogether, available spending for goods or services that foster good health and quality of life may also decrease (Bryant et al., 2002). For each increasing income bracket, it has been shown that Canadians experience less sickness, longer life expectancies and improved health (Public Health Agency of Canada, 2013).

It is also important to understand that a more unequal society can generate greater risk for health across all income levels, including “low decreased overall life satisfaction, low levels of social cohesion, decreased public participation, greater mistrust and an overall reduction in the quality of social relations” (Wilkinson et al., 2011).

Key Findings:

- The proportion of youth in communities across the CVRD is decreasing. First Nations communities experienced the lowest decline in youth.
- First Nations communities in the region are significantly less economically diverse than other CVRD communities, largely due to their increasing reliance on public administration employment.
- Between 2008 and 2012, the City of Duncan achieved a high number of business formations for a community of its size, well above the provincial average.
- Median incomes in the CVRD rose consistently between 2000 and 2010. Median incomes in the Town of Ladysmith, North Cowichan, Southern Electoral Areas, and Western Electoral Areas were close to or higher than the provincial median in 2010.
- Median incomes in First Nations communities are significantly lower than other communities in the CVRD. However, the gap between Aboriginal and non-Aboriginal median incomes is closing. In 2010, Aboriginal peoples in the City of Duncan earned 3.5% more than the general population (Aboriginal and non-Aboriginal populations).
- In 2005 and 2010, City of Duncan, Town of Lake Cowichan, and the Northern Electoral Areas had the highest proportion of low income persons in the CVRD. Data was unavailable for First Nations communities for this measure.
- Single parent incomes vary greatly throughout the region. In 2010, the average income for lone-parent families in the Western Electoral Areas was \$71,767 compared to \$34,024 in the Town of Lake Cowichan and \$29,271 in First Nations communities.
- Between 2005 and 2010, income inequality increased substantially in the City of Duncan, Town of Lake Cowichan and the Northern Electoral Areas. In contrast, inequality dropped in the Western Electoral Areas and was the most equal area in the CVRD.
- While the majority of survey respondents reported always having enough to eat, food security is an issue for some individuals across the region.
- City of Duncan had the highest proportion of households who spend 30% or more of their total income on shelter.

Table 7: Income and Social Status Indicators Overview

Indicator Name	Indicator Description	Relevance to Health and Well-being
<i>Local Economy</i>		
Labour force growth	<ul style="list-style-type: none"> ▪ The change in the population of the prime working age group (25 to 64 years). ▪ Change in youth retention, calculated as the percentage change of the 15-19 year old cohort in 2006 compared to 20-24 year old age cohort in 2011. 	<ul style="list-style-type: none"> ▪ Economic instability can contribute to poor physical and mental health (Public Health Agency of Canada, 2013).
Diversity index	<ul style="list-style-type: none"> ▪ The percentage of employment by industry class by community compared to the provincial percentage of employment by industry class. 	
Building license value per capita	<ul style="list-style-type: none"> ▪ The total value of building permits per capita. 	<ul style="list-style-type: none"> ▪ A vibrant and growing economy that generates new employment opportunities can help prevent mental and physical health issues associated with unemployment (Public Health Agency of Canada, 2013).
Business formations	<ul style="list-style-type: none"> ▪ Total business incorporations per thousand persons as well as the number of business locations in the CVRD. 	
Large employer openings and closures	<ul style="list-style-type: none"> ▪ The number of large businesses established or closed in 2013. 	<ul style="list-style-type: none"> ▪ Persons facing unemployment and economic instability are at higher risk for mental health problems and poorer physical health outcomes (Public Health Agency of Canada 2013).

Indicator Name	Indicator Description	Relevance to Health and Well-being
<i>Income & Inequality</i>		
Median income	<ul style="list-style-type: none"> Median income is the amount that divides the income distribution into two equal groups—half having income above that amount, and half having income below that amount. 	<ul style="list-style-type: none"> Lower income persons are at higher risk of poorer health outcomes as there is less money available for quality housing, nutritious food, recreation, and other elements that contribute to health and well-being (Public Health Agency of Canada, 2013).
Median income by Aboriginal status	<ul style="list-style-type: none"> Median income of the Aboriginal population compared to the median income of the non-Aboriginal population, expressed as a ratio. 	
Low income persons	<ul style="list-style-type: none"> Percentage of the population considered low income based on the after-tax low-income measure (LIM) (2010) and/or the after-tax low income cut-off (LICO) (2005). The LIM is 50% of median adjusted economic family income, where "adjusted" indicates that family needs are taken into account (Statistics Canada, 2009). The LICO estimates an income threshold at which families are expected to spend 20% more than the average family on food, shelter and clothing. 	
Average family income of lone-parent economic families	<ul style="list-style-type: none"> Identifies the level of financial stability among families with one wage earner. 	

Indicator Name	Indicator Description	Relevance to Health and Well-being
Children aged 17 and under living in low income families	<ul style="list-style-type: none"> Percentage of children and youth considered low income based on the after-tax low-income measure (LIM). 	<ul style="list-style-type: none"> Children living in families with lower incomes are at a greater risk of experiencing negative health outcomes and poor living conditions than those in higher-income families (Ross & Roberts, 1999).
Income inequality	<ul style="list-style-type: none"> Difference between average (mean) and median family incomes, expressed as a percentage. Average income is the arithmetic mean income. Median income is the amount that divides the income distribution into two equal groups—half having income above that amount, and half having income below that amount. It is often reported in the media as the “average” income because statistical agencies typically report the median income. 	<ul style="list-style-type: none"> Income inequality is the extent to which income is distributed unevenly in a community, region or province. High income inequality has negative physical and mental health consequences for communities as a whole (Public Health Agency of Canada, 2013).
Percent of population on BC Government income assistance by Local Health Area (LHA)	<ul style="list-style-type: none"> Percentage of the population receiving Temporary Assistance under the BC Employment and Assistance Program. Income assistance usage is measured quarterly, for residents aged 19 to 64. 	<ul style="list-style-type: none"> People receiving social assistance tend to have lower health outcomes (Public Health Association of British Columbia, 2008).
Food security	<ul style="list-style-type: none"> Percentage of households reporting that have enough food to eat (and that the food they have is the kind they want to eat) as well as the average monthly cost of food. 	<ul style="list-style-type: none"> Having access at all times to food that is safe, nutritious, affordable, and culturally appropriate is important for health and well-being (Public Health Agency of Canada, 2013).

Indicator Name	Indicator Description	Relevance to Health and Well-being
<i>Housing Affordability</i>		
Percent of owned homes	<ul style="list-style-type: none"> The proportion of households that own their own dwelling. 	<ul style="list-style-type: none"> Households with the economic stability and income levels to invest in residential property tend to have better health outcomes.
Average residential dwelling selling price	<ul style="list-style-type: none"> The average cost of purchasing a residential dwelling. 	<ul style="list-style-type: none"> When housing values and shelter costs are high or when more than 30% of a household's income is spent on shelter, it may be difficult to access other determinants of health, such as nutritious food or recreation (Bryant et. al, 2002). <p>This is particularly important for groups who have less overall income such as low income households, individuals and families on income assistance, seniors, and youth/young adults.</p>
Percent of households spending 30% or more of household total income on shelter costs	<ul style="list-style-type: none"> The percentage of households that must allocate more than a third of their income to housing. 	
Average and median monthly shelter costs for rented dwellings	<ul style="list-style-type: none"> The average and median price of rent by community. 	

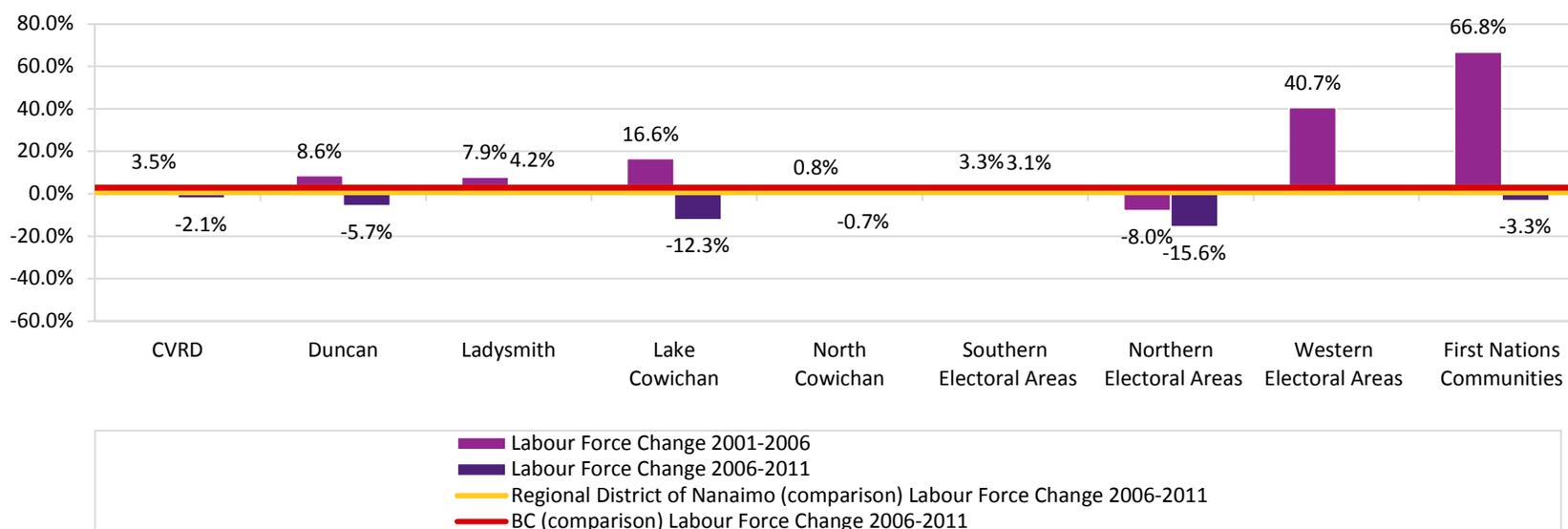
Local Economy

Labour Force Growth

Between 2006 and 2011, the CVRD's labour force numbers in the 25 to 64 age group decreased by 2.1%, while the size of the province's labour force in this age range increased by 2.9% and the Regional District of Nanaimo's labour force increased by 0.7%. All CVRD communities showed negative labour force growth between 2006 and 2011 and positive growth between 2001 and 2006 (except the Northern Electoral Areas in the earlier time frame).

Although the population of Lake Cowichan increased over the 2006 to 2011 period, its labour force declined due to a higher proportion of seniors and older workers. The grouping of First Nations communities registered the most substantial increase (66.8%) between 2001 and 2006, which was driven primarily by an increase from 315 to 670 individuals in the Cowichan reserve's labour force¹¹.

Figure 8: Labour Force Growth (2001, 2006, and 2011)



Source: Calculated from Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2013a.

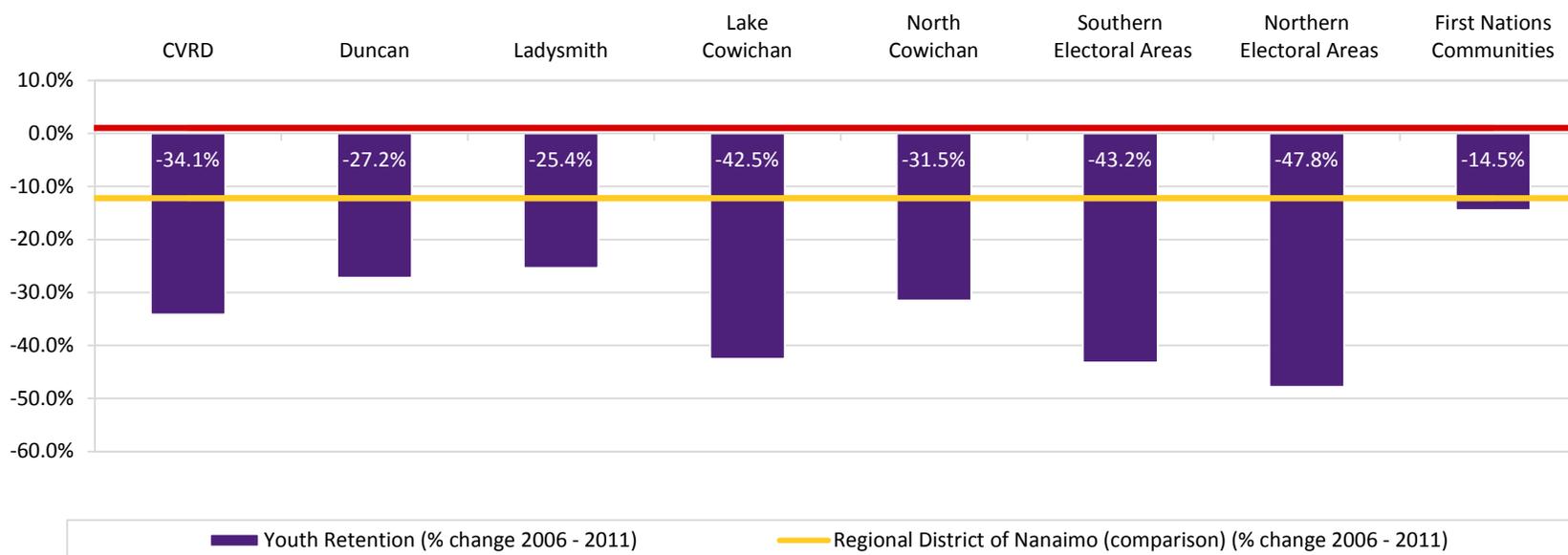
Note: As labour force by age group was unavailable at the census subdivision level, the proportional age of the population was applied to the total labour force.

¹¹ The results for First Nations communities are reported as an aggregate or group and should be interpreted as indicative of trends for the group of communities and settlements located on Reserves and not as specific to a single First Nation community.

The CVRD experienced negative youth retention between 2006 and 2011; the difference between the population aged 15 to 19 in 2006 and the same cohort in 2011 (when they would have been aged 20 to 24) fell by 34.1%, compared to an average 1.0% increase in BC and a decrease of 12.2% in the Regional District of Nanaimo. This

result suggests that prospective young workers are relocating outside of the CVRD. Lake Cowichan and the Electoral Areas experienced the highest loss of youth population, while the grouping of First Nations communities saw the lowest decline in the CVRD at 14.5%.

Figure 9: Youth Retention (2006 to 2011)



Source: Calculated from Statistics Canada 2007a and Statistics Canada 2012

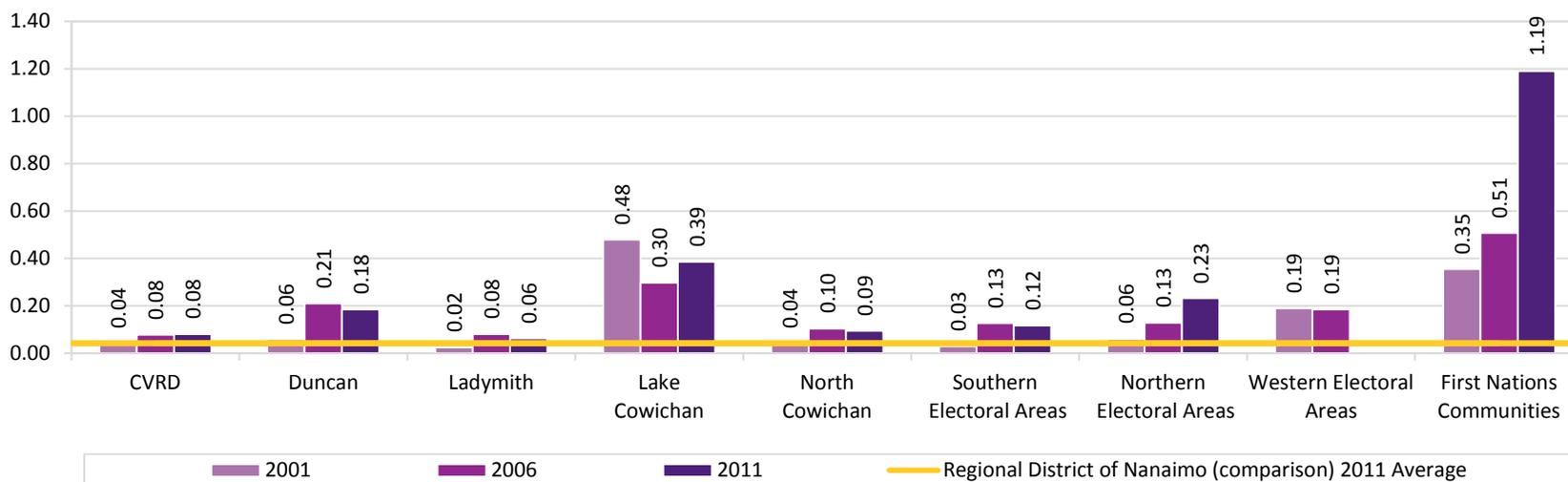
Note: As labour force by age group was unavailable at the census subdivision level, the proportional age of the population was applied to the total labour force.

Economic Diversity Index

The economic diversity index characterizes the diversity of the CVRD’s economy by comparing the proportion of jobs in different industries. The CVRD situation is compared to the BC average diversity to assess its relative diversity; the closer the diversity index score is to zero, the closer that community matches the provincial labour force breakdown by economic sector or industry. A higher index number indicates the community’s economy is less diverse than the province, and therefore has a greater reliance on certain industries which can make it more vulnerable to changing economic trends. In 2011, the CVRD’s economy was equal to the Regional District of Nanaimo in terms of diversity (0.4) and similar to the province although the province was relatively more reliant

on the primary industries of agriculture, forestry, fishing and hunting, followed by information and cultural industries and construction. Although the City of Duncan was comparable in its level of economic diversity to the CVRD in 2001, it has become more reliant on the manufacturing, retail trade and construction sectors (and therefore slightly less diverse). The grouping of First Nation communities in particular, has experienced a significant decrease in economic diversity since 2001, largely driven by an increasing reliance on public administration employment. Lake Cowichan also registered lower economic diversity, and has generally been relatively more reliant on the agriculture and natural resource sectors.

Figure 10: Economic Diversity Index (2001 to 2011)



Source: Calculated from Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2013a

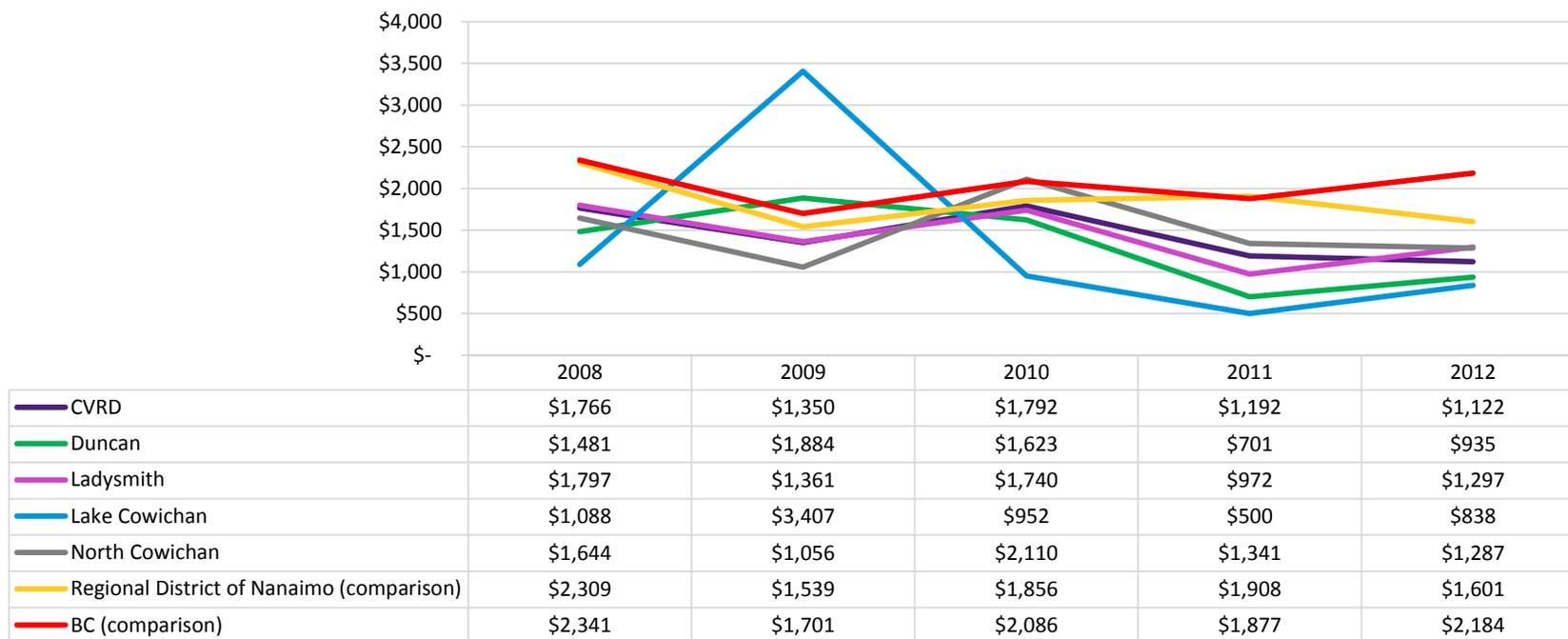
Note: For the diversity index above, BC is equal to zero and is therefore not listed. It is the comparator for the remaining categories.

Building License Value

Per capita building license values decreased over the 2008 to 2012 time frame in the CVRD, the Regional District of Nanaimo, the province, and in each of the CVRD communities presented in Figure 11. Within the CVRD, Lake Cowichan experienced the smallest decline in per capita business license values, falling by \$250 between 2008 and 2012. Over the same time period, the

City of Duncan experienced the greatest decline, as per capita license values decreased from \$1,481 to \$935. There was a peak in 2009 in Lake Cowichan but otherwise per capita building license value in the CVRD communities trailed the provincial result over the 2008 to 2012 period.

Figure 11: Building License Value per Capita (2008 to 2012)



Source: Calculated from BC Stats 2012a; BC Stats 2014; Statistics Canada. 2013c

Note: Values have been deflated to adjust for inflation and are in 2007 dollars.

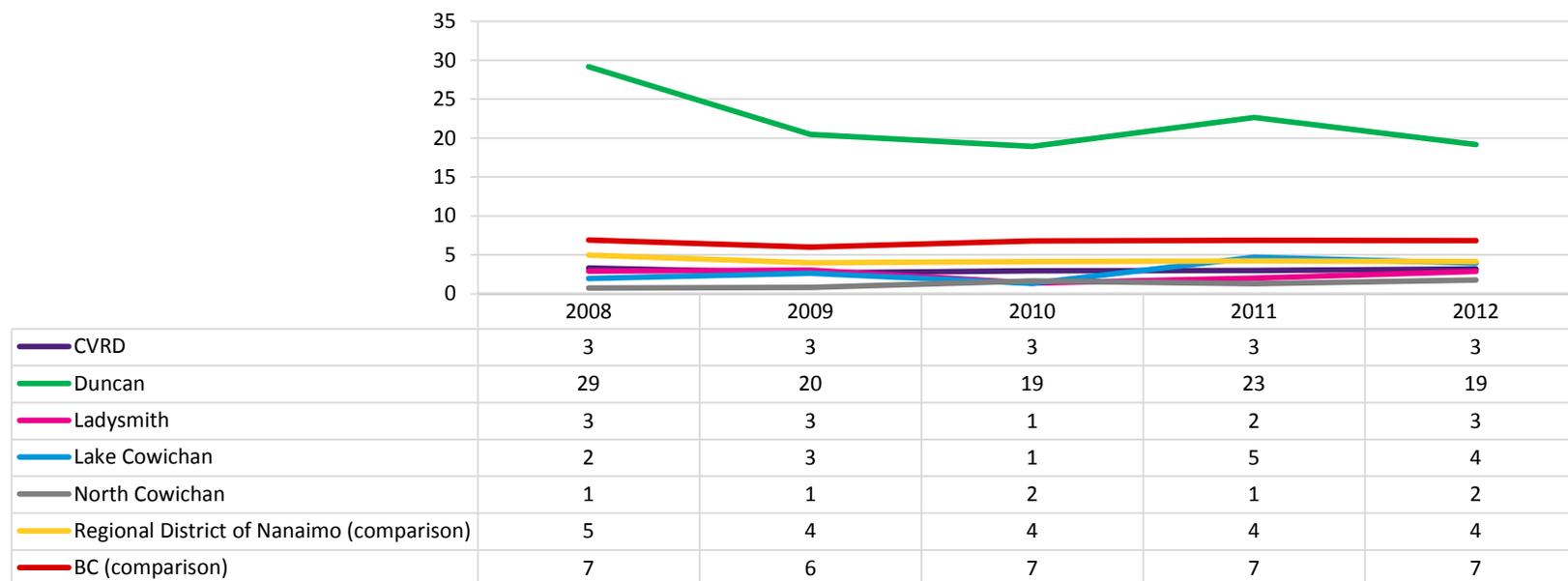
Business Formations

The CVRD’s business formations per capita rate was approximately half the BC result over the 2008 to 2012 time period¹². However, the City of Duncan consistently achieved more than double the BC rate, with 18.9 to 19.2 business formations for every thousand people during the period shown. The CVRD rate

was lower because of the weaker performance in other areas for this important indicator of economic vitality¹³.

Between 2007 and 2013, the total number of business locations (e.g., number of independent and individual chain businesses) in the CVRD grew from 2,569 to a high of 2,879 (BC Stats, 2013a).

Figure 12: Business Formations per Thousand Persons (2008 to 2012)



Source: Calculated from BC Stats 2013b; BC Stats 2014.

Subdivisions not included: Northern, Southern, and Western Electoral Areas, and First Nations communities.

¹² Business formations per thousand persons is calculated by dividing the number of business formations by the total population and multiplied by a thousand

¹³ Some new businesses list their lawyer’s address as their address on their incorporation report so this factor likely account for a small portion of the higher Duncan results compared to other CVRD communities.

Large Employer Openings and Closures

Between 2007 and 2012, the total number of businesses in Cowichan grew by 6%, with the greatest growth found in businesses with fewer than 19 employees (Cowichan Valley Regional District, 2013). According to Economic Development Cowichan, there were few business closures in 2013, particularly in the case of major businesses (Lachman, 2013, pers. comm.).

Based on BC Ministry of Jobs, Tourism and Skills Training information, there are two major business projects taking place in the CVRD (2013):

- Near Duncan, the Parhar Group has begun construction on the Parhar Business Park, a 200,000 square foot commercial development on a 3.25 acre property. The first phase of the project includes the establishment of local food processors on 60,000 square feet, with eventual plans to build 12 to 14 buildings onsite. Construction on this \$40 million project began in January 2013 with completion targeted for 2017 (Ministry of Jobs, Tourism and Skills Training 2013).
- In Ladysmith, Western Forest Products Inc. has begun an expansion of the Saltair Sawmill, in order to increase the production of milled lumber products from 160 million board feet per year to 200 million board feet per year. This \$38 million project began in November 2012. Another project, a \$25 million 140-unit residential development project, is currently on hold in Ladysmith (Ministry of Jobs, Tourism and Skills Training 2013).

In comparison, there are seven major projects under construction in Nanaimo, as well as six proposed projects and three projects currently on hold. These projects range in cost from \$15 million to \$1 billion. The largest project is for the Sandstone Town Centre, a new development of approximately one million square feet of residential and mixed uses for 2,000 residents on 726 acres of land and approximately one million square feet of space for industrial buildings. This project is at the proposal stage (Ministry of Jobs, Tourism and Skills Training 2013).



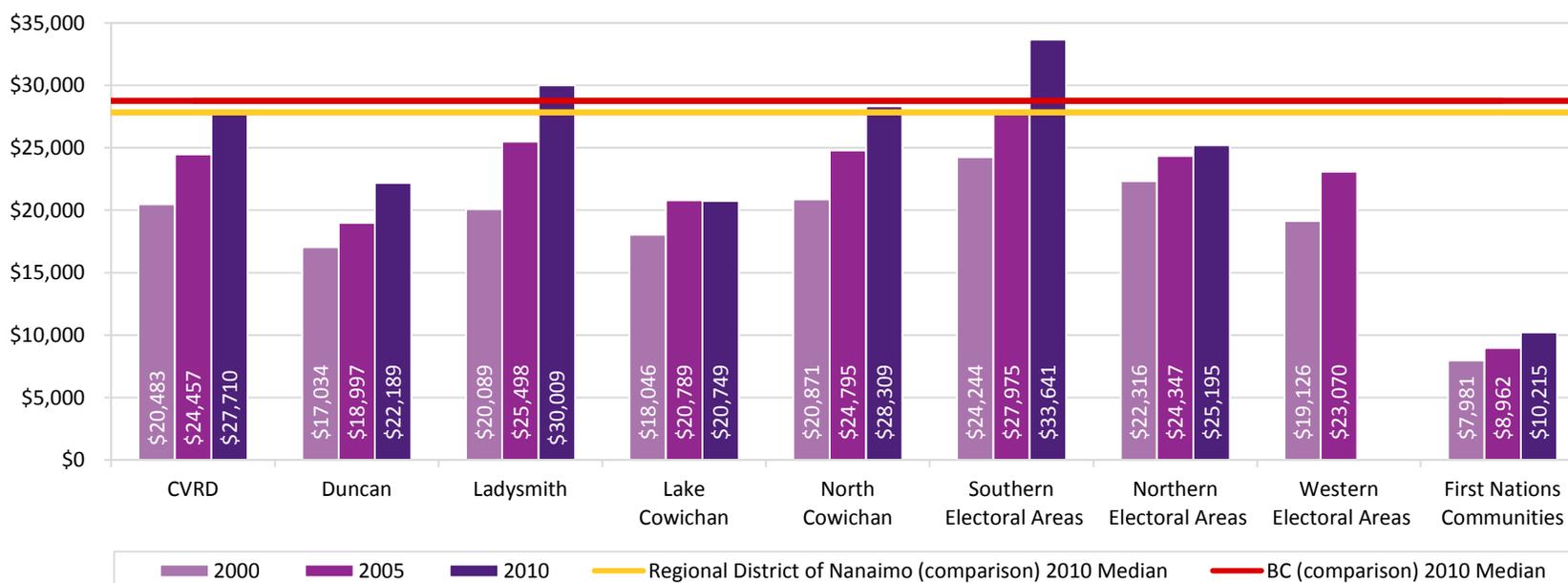
Income & Inequality

Median Income

Between 2000 and 2010, the median income in the CVRD rose from \$20,483 to \$27,710, which is close to the Regional District of Nanaimo's median of \$27,825 and the BC median of \$28,765. Median incomes rose each year in CVRD communities, except Lake Cowichan where median incomes dropped slightly between 2005 and 2010. The City of Duncan's median income was consistently below the CVRD and BC median incomes in the past

decade, with a gap of more than \$5,000 in 2010. The Southern Electoral Area group of communities has seen the fastest increase in median income, and has maintained the highest median income in the CVRD since 2000. First Nation communities have seen an increasing gap in income equality compared with other communities and were approximately \$17,000 below the regional median in 2010.

Figure 13: Median Income (2000, 2005, and 2010)



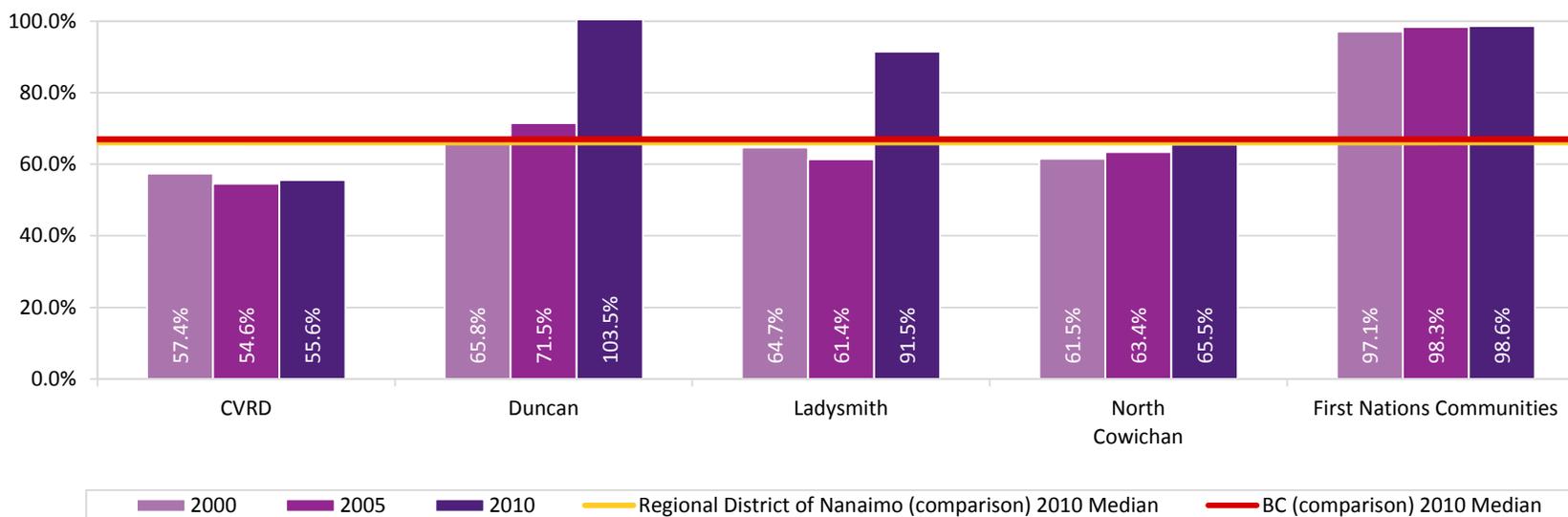
Source: Calculated from Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2013a

Median Income by Aboriginal Group

The chart below shows median Aboriginal income as a percentage of the general population’s median income. In 2010, the Aboriginal median income in the CVRD was 55.6% of the general population’s median income, which is 10 percentage points lower compared to the already relatively low BC Aboriginal population statistic of 67% of the general population’s median income. Between 2000 and 2010, City of Duncan and Town of Ladysmith Aboriginal populations experienced an important narrowing of the

gap, as their Aboriginal median incomes reached or exceeded the general population’s median income. While the Electoral Area groupings are not illustrated in the chart below (as data was unavailable for 2000 and 2005), median Aboriginal incomes were quite high in 2010 in Electoral Area B at \$55,376 but significantly lower in other Electoral Areas. North Cowichan experienced the lowest Aboriginal median income in 2010 of \$18,553.

Figure 14: Median Income Ratio by Aboriginal Status (2000, 2005, and 2010)



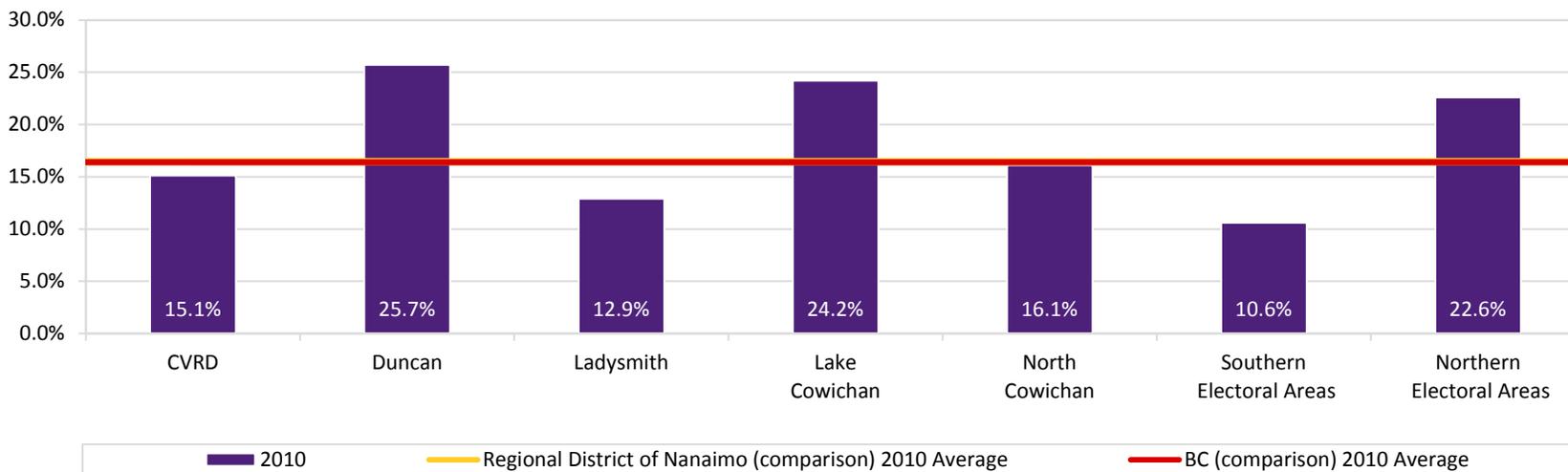
Source: Calculated from Statistics Canada 2002a, b; Statistics Canada 2007a, b; Statistics Canada 2013a, b

Low Income Persons

Statistics Canada used different measures in 2005 and 2010 to characterize low incomes. The after-tax low-income measure (LIM-AT) was calculated and reported in 2010 while Statistics Canada used the low-income cut-off (LICO) measure in 2005 and provided values for before and after tax. Income data from 2005 and 2010 are therefore not comparable and have been presented separately below (Statistics Canada 2014).

Using the LIM-AT measure, 15.1% of people in the CVRD were identified as low income in 2010, which was just below the BC percentage of 16.4%. City of Duncan, Lake Cowichan, and the Northern Electoral Areas group had greater proportions of low income persons than the Regional District of Nanaimo or the province, and were 7 to 10 percentage points higher than the CVRD’s 15.1% average. Data for the First Nation communities grouping were not available.

Figure 15: Low Income Persons, After Tax (2010)



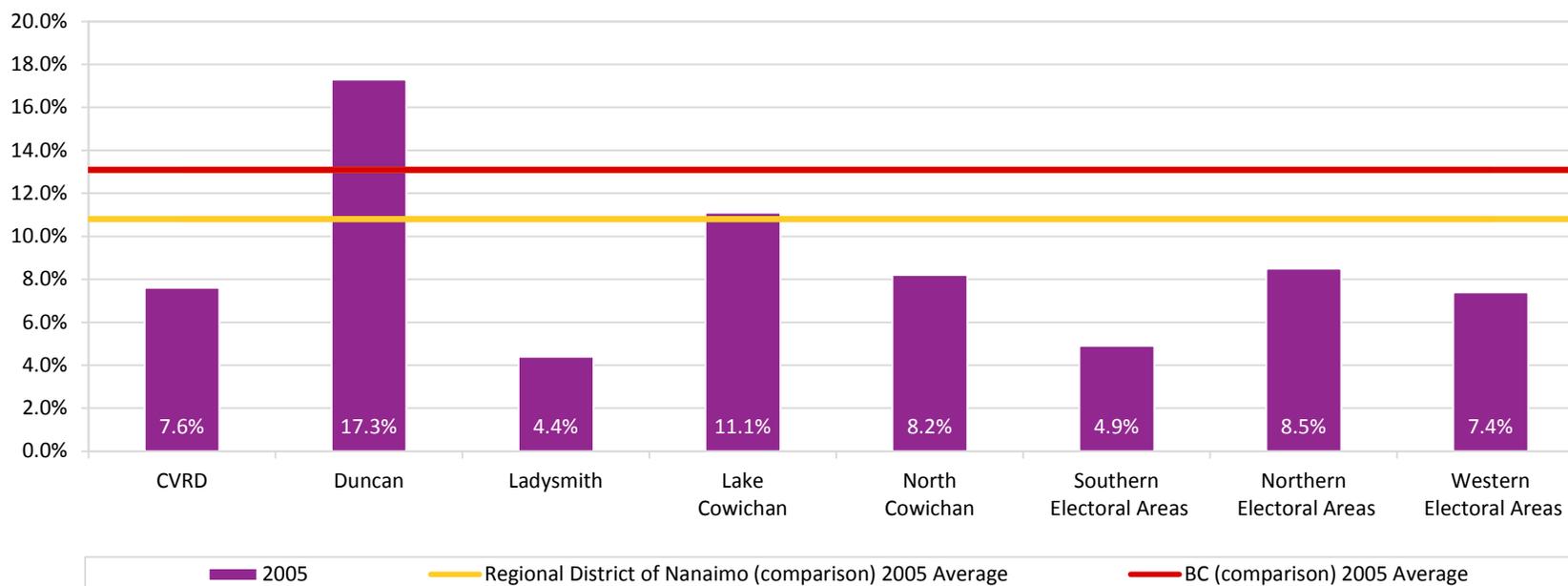
Source: Statistics Canada 2013a

Note: Low income is based on the low income measure after-tax (LIM-AT) in 2010 as per Statistics Canada. The LIM-AT represents a fixed percentage (50%) of median after-tax income per person, adjusted for household sizes. For example, the Canadian LIM-AT for a household of one in 2010 was \$19,460, for a household of two \$27,521, and for a household of four \$38,920.

The CVRD's after-tax low income situation compared quite favourably to the BC average (7.6% versus 13.1%) in 2005 based on the low income cut-off (LICO) measure. The low income distribution across the CVRD however was similar in 2005 to 2010,

with low income individuals being concentrated in the City of Duncan at 17.3% of the population. Data for First Nation communities were not available.

Figure 16: Low Income Persons (2005)



Source: Statistics Canada 2007a.

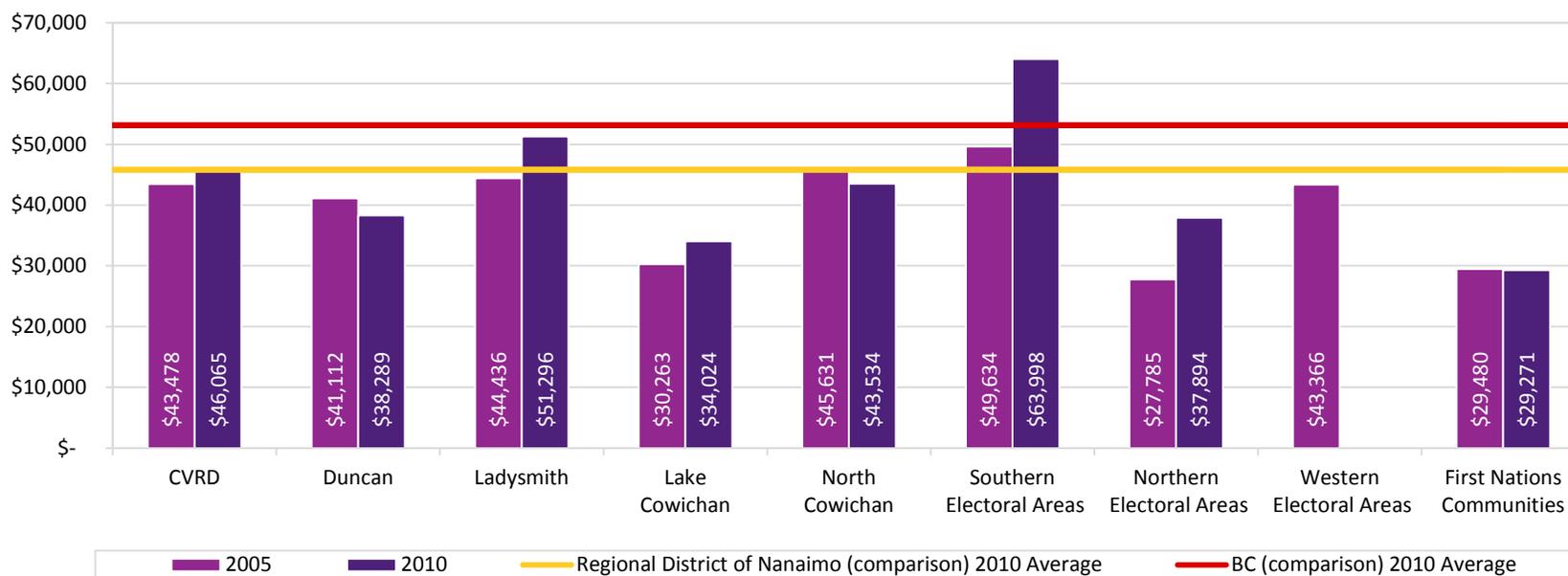
Note: Low income is based on the (after-tax) low income cut-off (LICO) in 2005, as per Statistics Canada. The LICO represents an income level below which a household will spend a larger share of its income on basic necessities such as food, shelter, and clothing than an average family. For example, for a family of four in 2005, the low income cut-off was \$21,359.

Average Family Income of Lone-Parent Economic Families

The average family income of CVRD lone-parent families rose from \$43,478 in 2006 to \$46,065 in 2010, which was similar to the Regional District of Nanaimo’s average, but below BC’s average of \$53,115. Within the CVRD, lone-parent families in Ladysmith and the Southern and Western Electoral Areas saw their average incomes rise between 2005 and both exceeded the provincial average by 2010. Over the same time period, lone-parent incomes

dropped slightly in the City of Duncan as well as in the First Nation communities group. Duncan, Town of Lake Cowichan, the Northern Electoral Areas group, and First Nation communities group were significantly lower than the provincial average. Based on these 2005 results, women earned significantly lower incomes on average than their male counterparts in the CVRD.

Figure 17: Average Family Income of Lone-parent Economic Families (2005 to 2010)



Source: Calculated from Statistics Canada 2007a; Statistics Canada 2013a.

Notes:

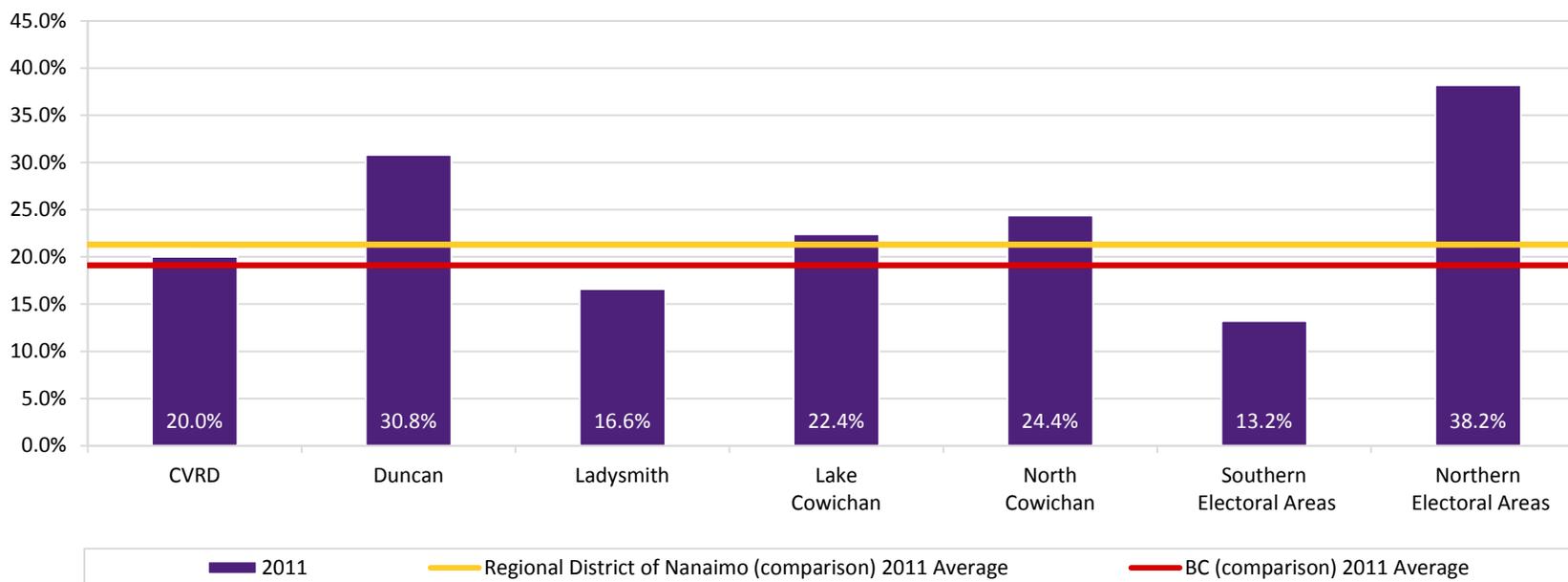
- a) For 2006, average family lone-parent income was calculated as the average of male lone-parent family incomes and female lone-parent family incomes, as per available data.
- b) In 2001, Statistics Canada did not publish data related to average lone-parent family incomes for the CVRD census subdivisions. Therefore, it is not reported upon above.

Children Aged 17 and Under Living in Low Income Families

In 2010, 20% of the children and youth in the CVRD were living in low income families, a similar result compared to the provincial average of 19.1%. The proportion of children living in low income families was highest in the Northern Electoral Areas, --particularly Area I where 51.6% of children lived in low income families-- and

in the City of Duncan. Electoral Area E, not shown in the graph below, had the smallest proportion of children in low income families (less than 5%). Data for the First Nation communities group were not available.

Figure 18: Children Aged 17 and Under Living in Low Income Families (2010)



Source: Calculated from Statistics Canada 2013a

Note: In 2001 and 2006, Statistics Canada did not publish data related to children aged 17 and under living in low-income families. Therefore, this data is not reported upon above.

Income Inequality

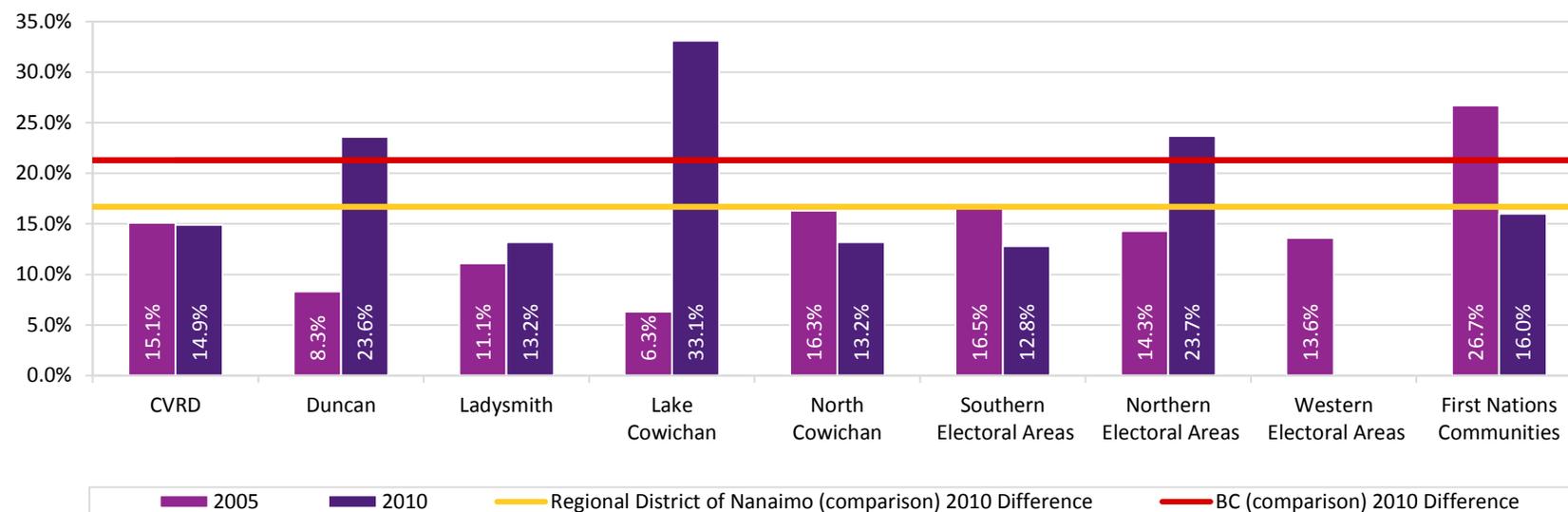
The gap between average and median family incomes is used to measure income inequality, with an excess of average over median income demonstrating income inequality and an increasing gap over time indicating growing income inequality.

Income inequality decreased slightly in the CVRD between 2005 and 2010. The CVRD’s average income exceeded its median income by 14.9% in 2010, significantly less for BC as a whole (+21.3%). The CVRD’s positive performance is largely due to the increase of average incomes between 2005 and 2010. Lake Cowichan showed the greatest difference between average and median family incomes in 2010 (+33.1%), a gap that exceeded

the aforementioned provincial level. There was also a large jump in income inequality for the City of Duncan between 2005 and 2010.

The First Nation communities group, North Cowichan, and the Southern and Western Electoral Area groups all experienced decreases in income inequality, a promising trend for these areas. The First Nation communities group achieved the most significant drop in inequality in 2010, largely driven by a growing income balance in the Stz’uminus community (Chemainus 13 census subdivision).

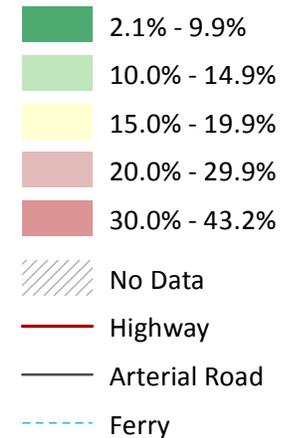
Figure 19: Income Inequality (2005 and 2010)



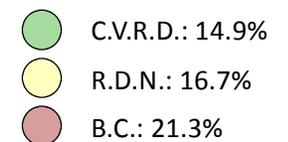
Source: Calculated from Statistics Canada 2007a; Statistics Canada 2013a.

INCOME INEQUALITY

DIFFERENCE BETWEEN AVERAGE AND MEDIAN FAMILY INCOMES, EXPRESSED AS A PERCENTAGE, BY CENSUS SUB-DIVISION

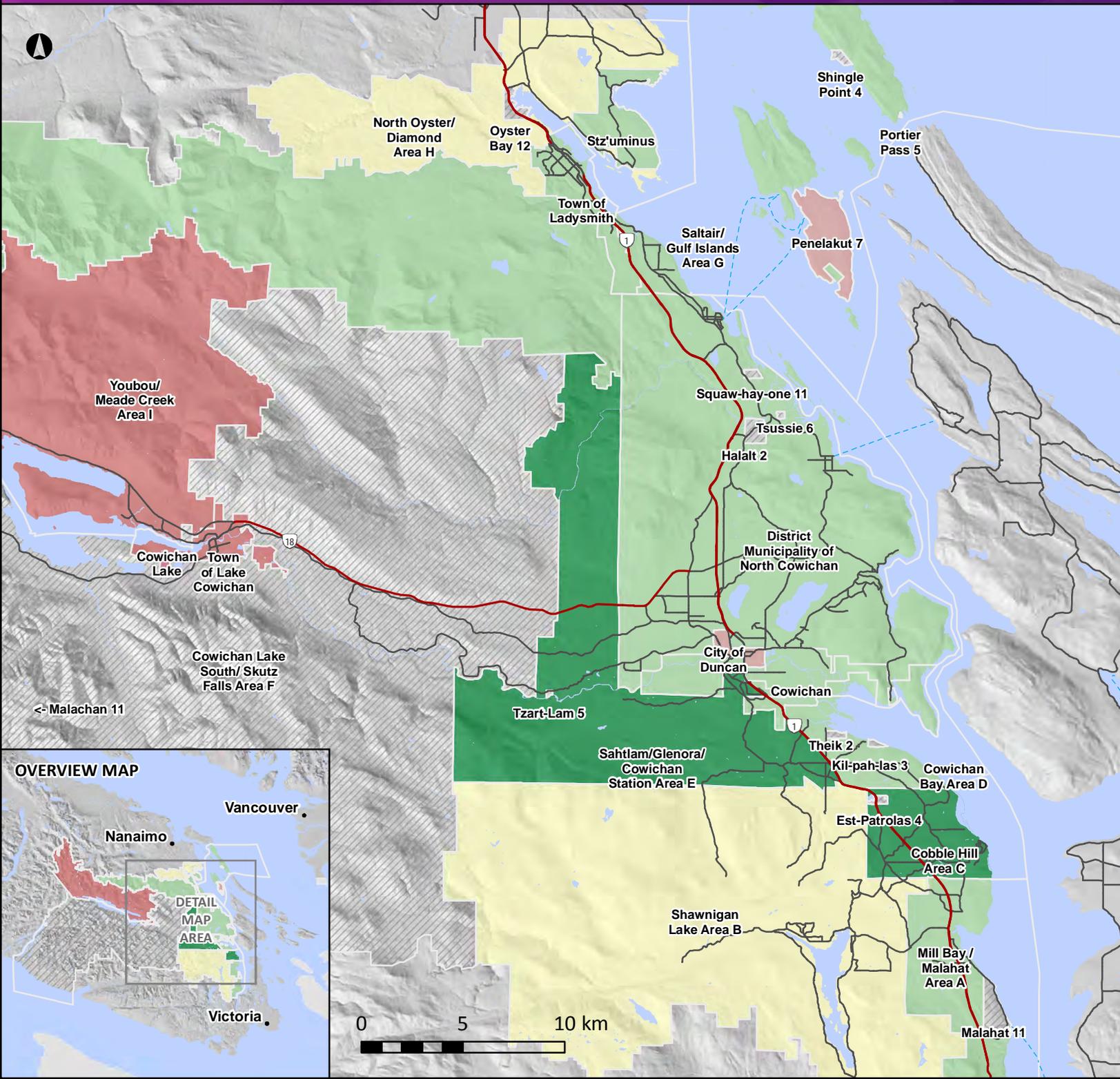


REGIONAL COMPARISONS



Statistical Data from Statistics Canada 2011 National Household Survey Population Profiles. Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.

Projection: UTM Zone 10 Datum: NAD 83
Date: May 1, 2014

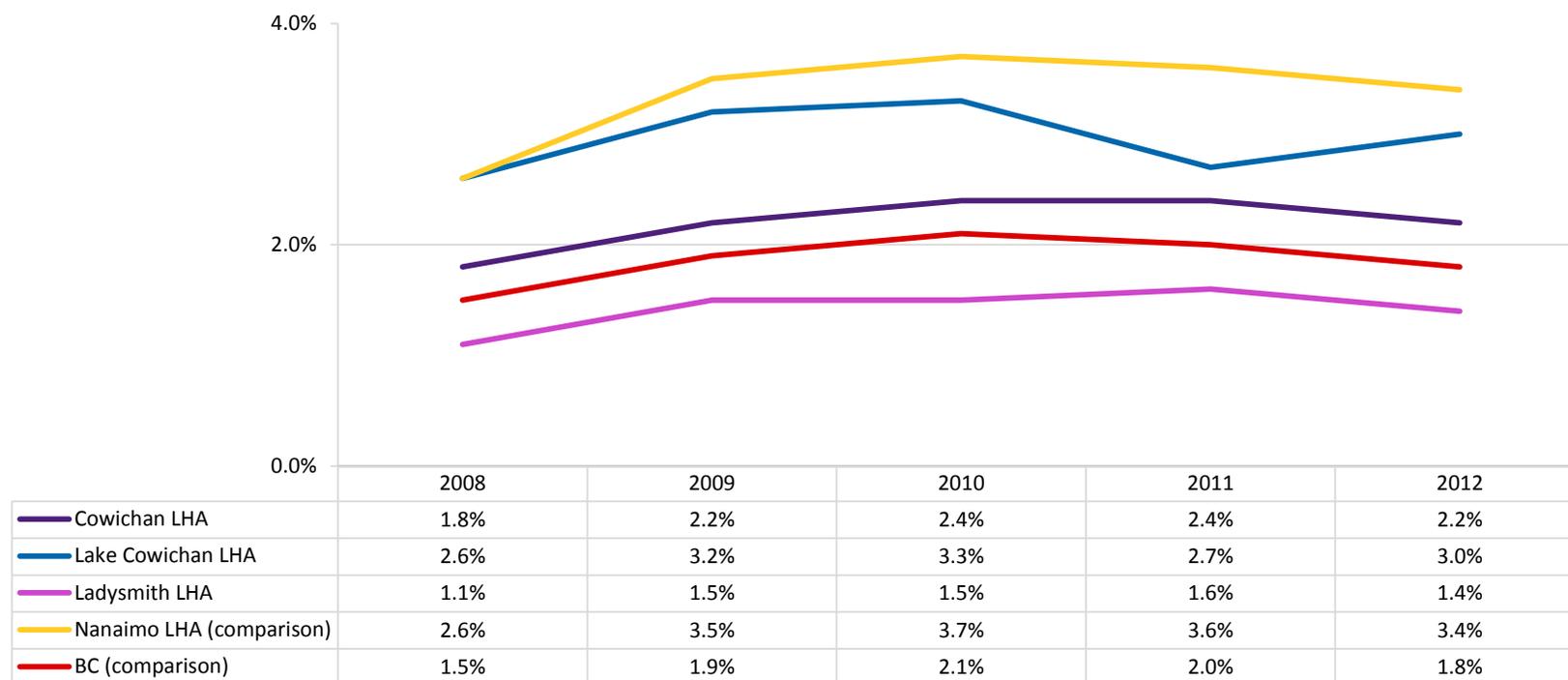


BC Government Income Assistance

Between 2008 and 2012, the Ladysmith LHA's income assistance rate¹⁴ remained below the BC average, while the Cowichan LHA and Lake Cowichan LHA rates fluctuated between the Nanaimo LHA rate and the BC average rate. The Lake Cowichan LHA's

income assistance rate was the highest in the Cowichan region over the 2008 to 2012 period, and it was the only LHA to experience an increase between 2011 and 2012.

Figure 20: Percent of Population on BC Government Income Assistance Rate (2008 to 2012)



Source: BC Stats, 2013c.

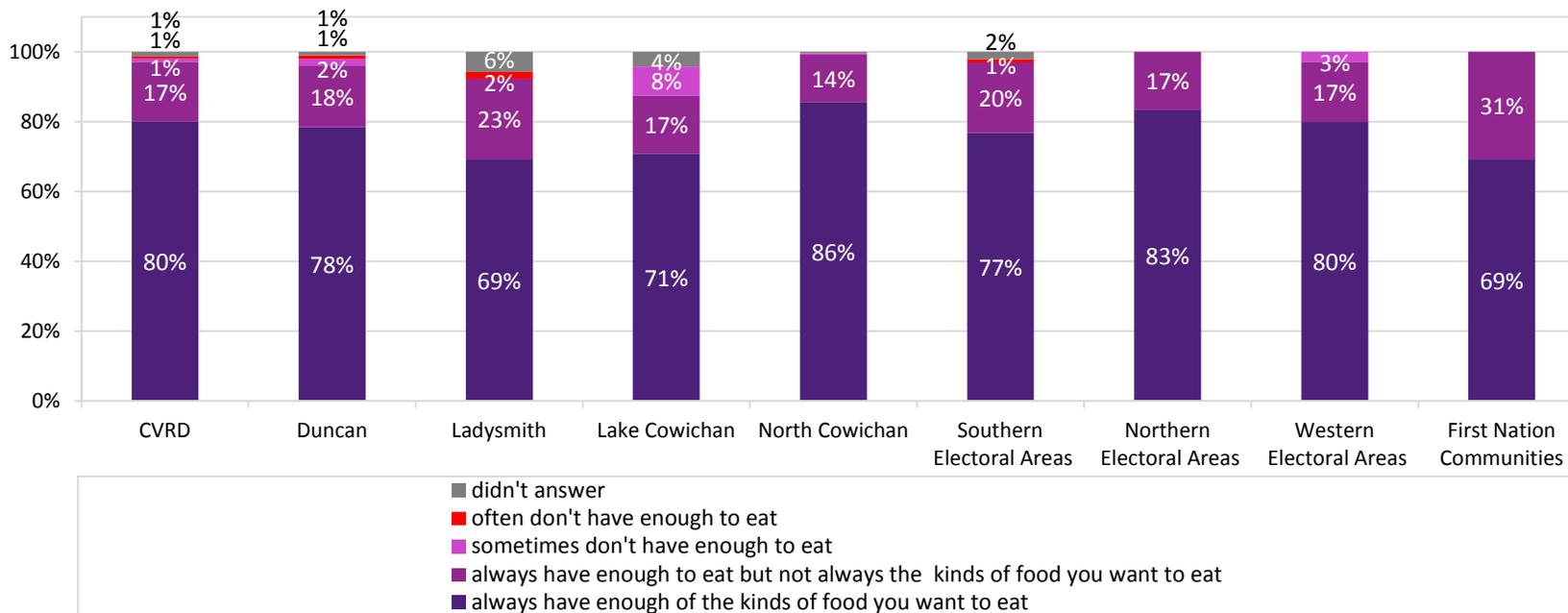
¹⁴ This income assistance rate is calculated by dividing the number of income assistance beneficiaries by the adult population. Quarterly rates were averaged to produce an annual rate.

Food Security

Food security is defined as a person’s perception that they always have access to the kinds of foods they want to eat. The Cowichan Community Health Survey asked respondents about their food security: 590 survey respondents answered this question. CVRD respondents generally reported lower levels of food security than respondents from BC in the 2011 Canadian Community Health Survey that asked the same question. The majority of CVRD respondents (80%) felt they were “food secure.” Over 20% of respondents from Ladysmith, Southern Electoral Areas and First

Nations communities reported moderate food insecurity (i.e., always having enough to eat but not the kinds of food desired) and between 1 and 8% of respondents from the City of Duncan, Town of Ladysmith, Town of Lake Cowichan, and the Southern and Western Electoral Areas reported a more serious food insecurity concern (sometimes or often not having enough to eat). However, it should be noted that survey responses from certain communities were limited so the results may not be representative.

Figure 21: Food security and insecurity, percentage distribution in the CVRD (2014)



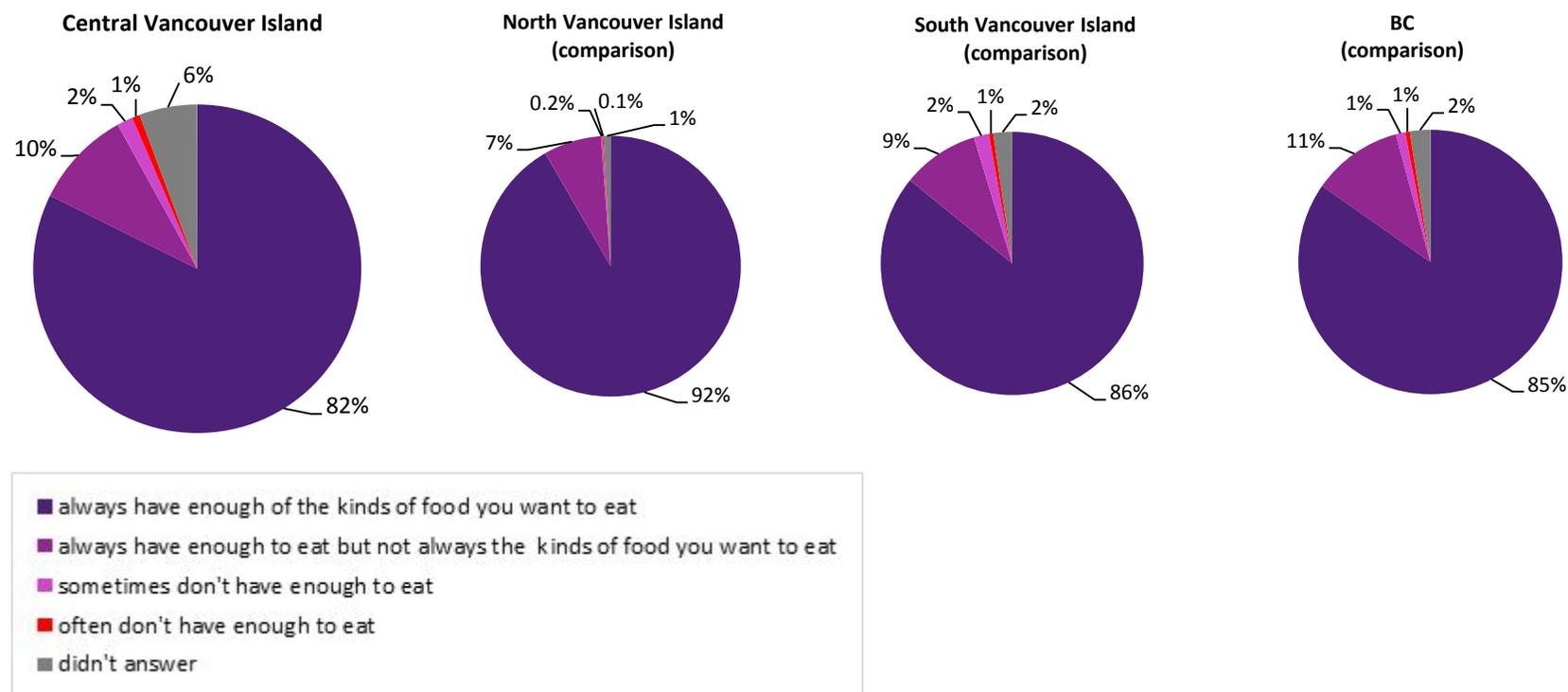
Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Perceptions about food security in the larger region of the Central Vancouver Island Health Service Delivery Area (which includes all Local Health Areas in the CVRD as well as Nanaimo, Qualicum, and Alberni Local Health Areas) are similar to Southern Vancouver Island and the province as a whole. While the majority of sampled households in Central Vancouver Island reported always having enough of the kinds of food they want to eat, approximately 13% of

all sampled households perceived facing moderate to severe food insecurity (do not always have access to the food they want to eat, sometimes don't have enough to eat, or often don't have enough to eat). The sampled Northern Island Health Service Delivery Area households had similar levels reporting moderate food insecurity but higher levels of households reporting as food secure and lower levels of households reporting as severely food insecure.

Figure 22: Food security and insecurity by Health Service Delivery Area (2012)



Source: Statistics Canada, 2012b.

For the purpose of comparison, it is worth noting that the cost of food has risen in recent years. In 2001, the average monthly cost to feed a family of four (two parents and two children) in British Columbia was \$626; by 2011, the average cost increased to \$868. On Vancouver Island, this cost is slightly higher with an average of \$873 per month in 2011. For a family of four with one median income earner, this represents 15% of their monthly income. However, for a family of four on income assistance, this equals

47% of their monthly income. When housing and other costs are considered, there is not enough money to cover the cost of adequate, healthy food for families or individuals on income assistance. This has serious implications for health and well-being, particularly as housing and food costs have risen over time and income assistance has not been changed to address inflation (Dieticians of Canada, 2011).

Figure 23: Average monthly cost of food for a family of four in British Columbia (2001 to 2011)



Source: Dieticians of Canada, 2011.

Housing Affordability

Compared to the province, the CVRD has more affordable housing. In 2011, 26.3% of households in the CVRD were spending 30% or more of their income on shelter, roughly 4 percentage points less than the rate for BC, which stands at 30%.

The stress associated with housing affordability can have negative physical and mental health outcomes (Ontario Public Health Association, n.d.). When housing is less affordable, spending on other goods and services that can influence health and quality of life, such as food and recreation, may be reduced (Bryant et. al, 2002). Also, low income housing may be of poor quality or located in less healthy areas, another threat to health.

Assessing housing needs and addressing affordability issues in the CVRD is a complicated matter. It involves collaboration among numerous organizations and examines the root causes of issues related to housing and homelessness. Social Planning

Cowichan is currently working on affordable housing and homelessness initiatives through its Affordable Housing Directorate and has plans to create an interim Board of Cowichan Region Affordable Housing Association (CRAHA) to focus on governance, projects, and advocacy. The Directorate recently published a report on Aboriginal Off-Reserve Housing Needs in the Cowichan Region in order to identify the need for safe, affordable and culturally appropriate housing (Social Planning Cowichan, 2014a). The CVRD is also in the process of finalizing a Housing Needs Assessment Report to assess housing needs throughout the region (to be released later this year).

Issues and initiatives related to homelessness, precarious housing, culturally appropriate housing, and seniors housing and residential care are provided under Key Determinant 5: Social Environments (page 84). Housing quality and age is reviewed under Key Determinant 6: Physical Environments (page 110).

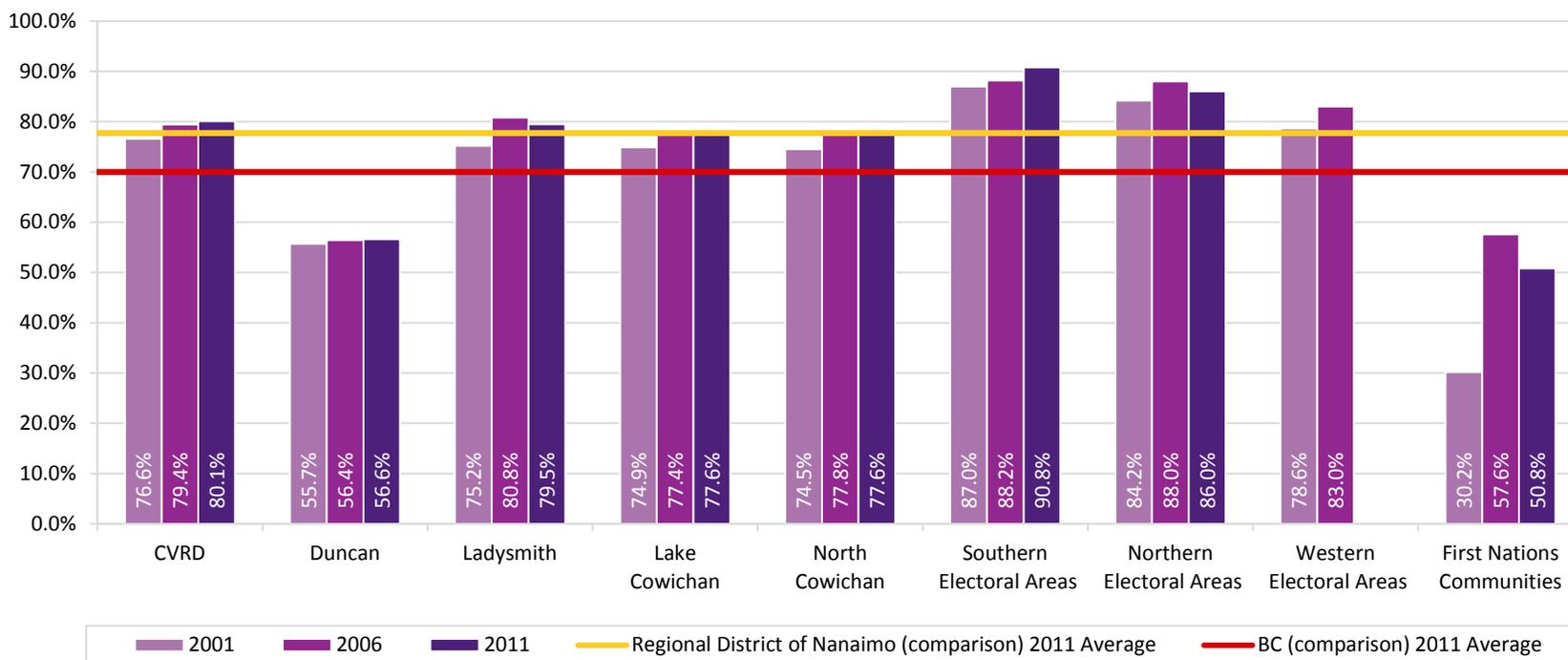


Percent of Owned Homes

The majority of CVRD households owned their homes in 2011, exceeding the provincial average (70.0%) by 10 percentage points. Duncan and the First Nation communities group had the lowest levels of home ownership, between 60% and 30%, respectively. In

the case of the First Nation communities grouping, ownership opportunities are affected by the proportion of Band-owned land and housing. The three Electoral Area groups had the highest rates of home ownership in the region.

Figure 24: Home Ownership Rate (2001, 2006, and 2011)



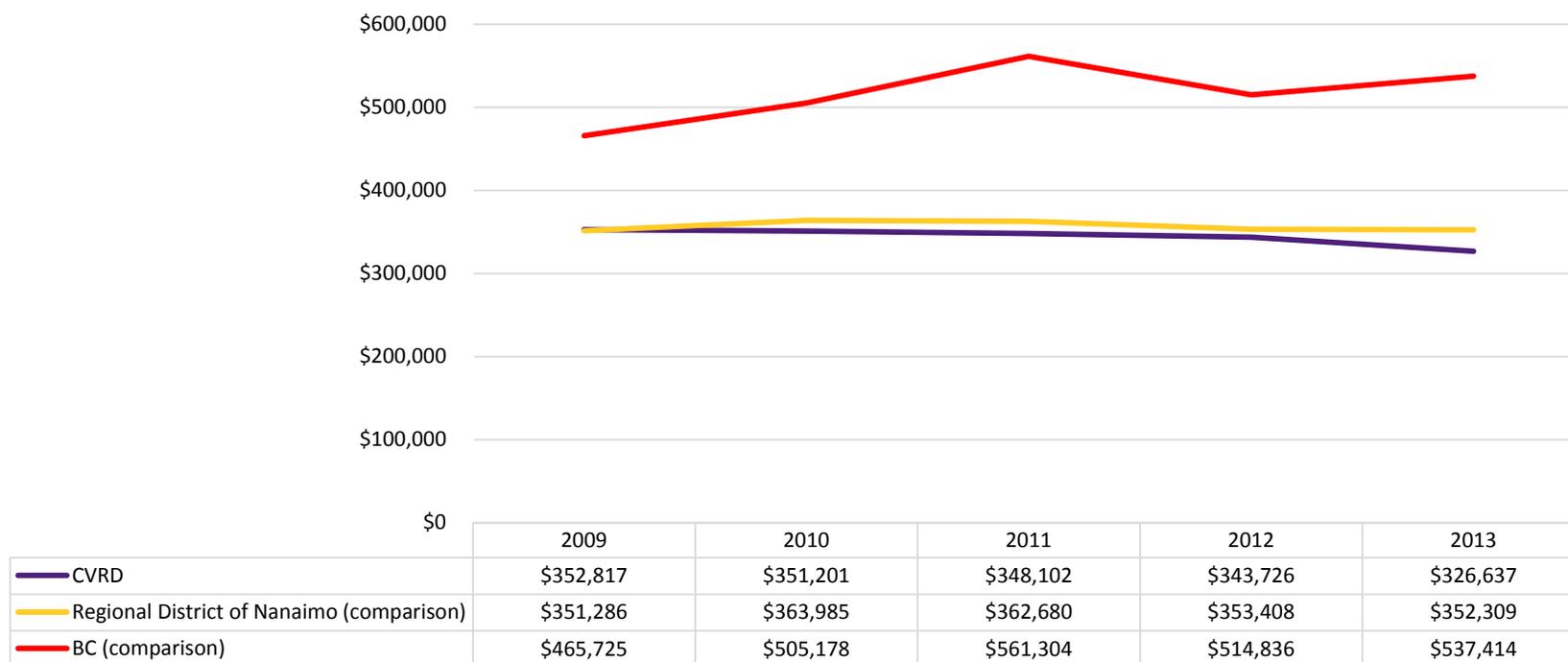
Source: Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2013a

Average Residential Dwelling Selling Price

Average residential dwelling prices have declined continuously in the Cowichan Valley, dropping from \$352, 229 in 2009 to \$326,637 in 2013 (Vancouver Island Real Estate Board 2013; Vancouver Island Real Estate Board 2009). While residential price trends in the Cowichan Valley were similar to those in Nanaimo,

average BC housing prices have increased by close to \$70,000 over the same timeframe. Average residential sale prices in the Cowichan Valley were approximately 75% of the provincial average in 2009, and fell to 60% by 2013.

Figure 25: Average Residential Dwelling Selling Price (2009-2013)



Source: Vancouver Island Real Estate Board 2013; Vancouver Island Real Estate Board 2012; Vancouver Island Real Estate Board 2011; Vancouver Island Real Estate Board 2010; Vancouver Island Real Estate Board 2009.

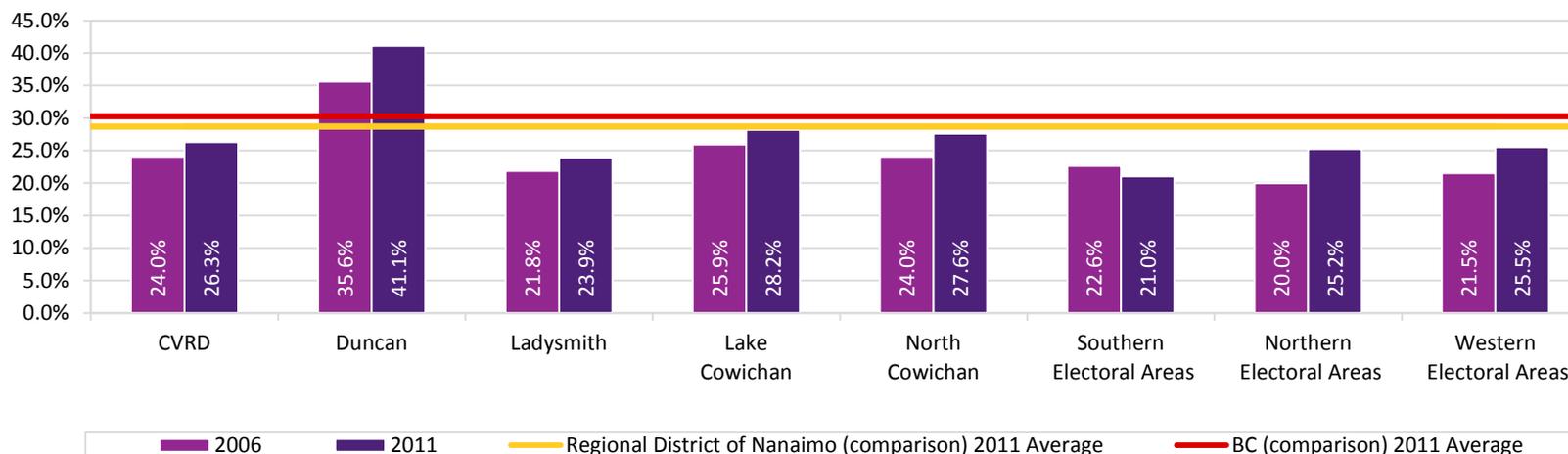
Note: Average sale price based on single-family residential units sales, derived from Multiple Listing Service data.

Households Spending 30% or More of Household Total Income on Shelter Costs

In 2011, 26.3% of households in the CVRD were spending 30% of more of their income on shelter (the affordability threshold), which is close to 4 percentage points less than the rate for BC (30%), and a positive condition for the region. Within the CVRD, The City of Duncan fared the worst with over 40% of its residents spending a third or more of their income on shelter, exceeding the

BC average by over 10 percentage points. The City of Duncan’s performance on this indicator is likely related to its lower median income and higher rates of inequality compared to the CVRD. The other areas of the CVRD have much lower percentages of their households spending 30% of their income on housing. Data for First Nations communities were not available.

Figure 26: Percent of Households Spending 30% or More of Total Income on Shelter Costs (2006 to 2011)



Source: Calculated from Statistics Canada 2007a; Statistics Canada 2013a.

Notes:

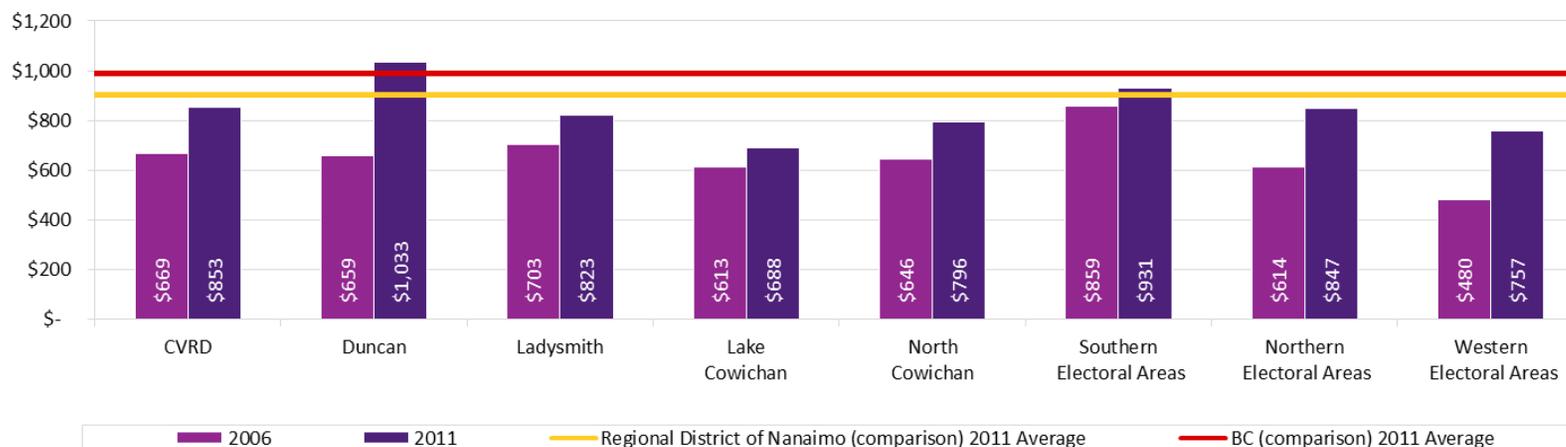
- a) Percent of household's spending 30% or more on shelter costs for Electoral Areas are calculated based on the average in each community.
- b) Statistics Canada did not publish data related to household spending on shelter costs for First Nations communities.
- c) The affordability threshold was set by the Canadian Mortgage and Housing Corporation (CMHC) in 1986.
- d) In 2001, Statistics Canada did not publish data related to household spending on shelter costs for the CVRD census subdivisions. Therefore, it is not reported upon above.

Average and Median Monthly Shelter Costs for Rented Dwellings

Average gross rent includes the rent cost of shelter as well as the cost of electricity, heat, and municipal services. Between 2006 and 2011, the CVRD’s average gross monthly rent increased from \$669 to \$853, but remained below the provincial average rental price of

\$989. In 2011 the City of Duncan’s gross rental price exceeded the BC average gross rental price by over \$40 per month. Data for First Nations communities were not available.

Figure 27: Average Gross Monthly Shelter Costs for Rented Dwellings (2006 to 2011)



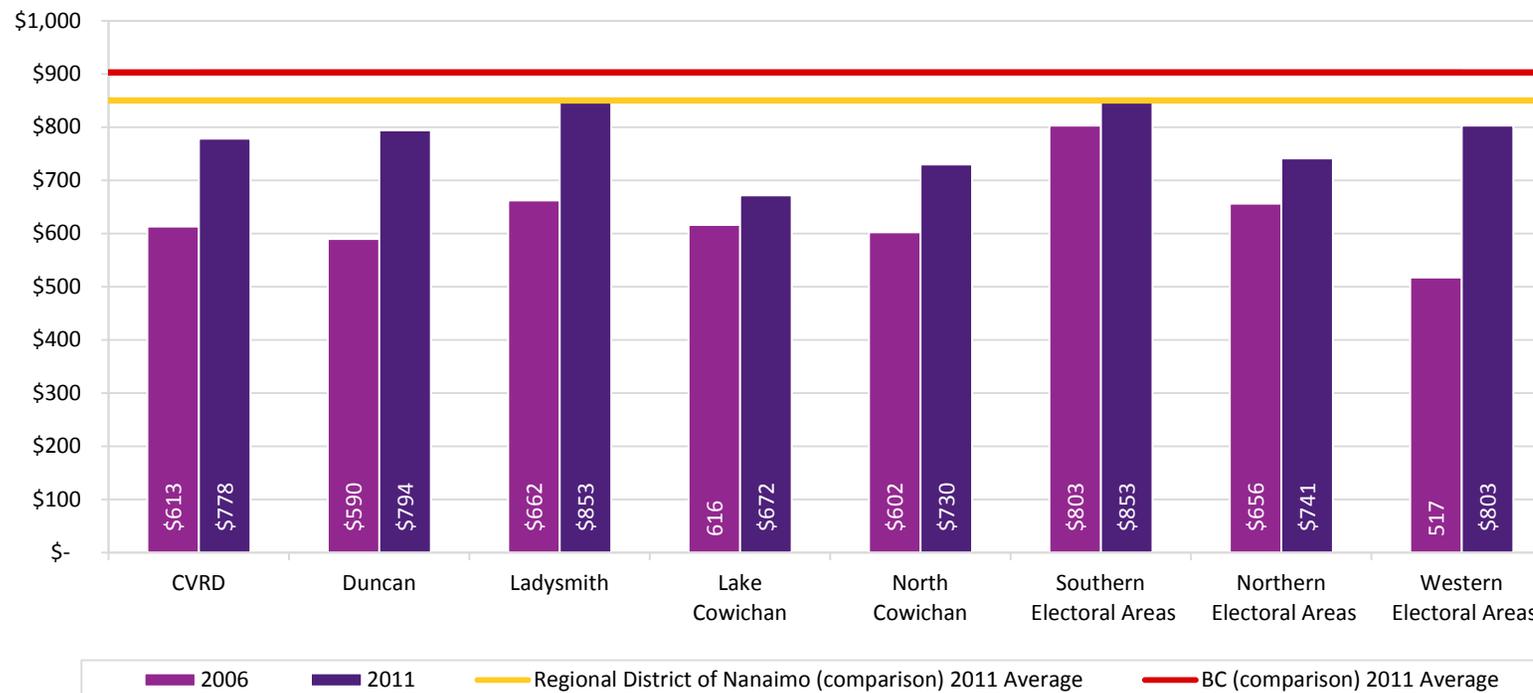
Source: Calculated from Statistics Canada 2007a and Statistics Canada 2013a

Note: Statistics Canada did not publish data on median monthly shelter costs for rented dwellings in 2001; therefore, it has not been included for average or median data sets.

CVRD median monthly rent costs also increased between 2006 and 2011, but were lower than the average rental costs. Unlike the average rental cost, the median rental cost was higher in the Town of Ladysmith compared to the City of Duncan, and both were under the BC median. The comparison between average and median rental costs suggests that the rental housing market

in the CVRD is becoming more skewed towards the higher-end; this trend is particularly pronounced in the City of Duncan. The higher rate of income inequality in Duncan may be influencing that rental market.

Figure 28: Median Monthly Shelter Costs for Rented Dwellings (2006 to 2011)



Source: Calculated from Statistics Canada 2007a; Statistics Canada 2013a

Note: Statistics Canada did not publish data on median monthly shelter costs for rented dwellings in 2001; therefore, it has not been included for average or median data sets.



Key Determinant 2: Social Support Networks

Informal social support from families, communities and friends is associated with better health, as is a provision of formal social care and support. The caring and respect in social relationships can act as a buffer to adverse health events.

Multiple studies in the United States have shown that people with larger social networks tended to have lower premature death rates; and people with low levels emotional support and little social participation had higher rates of mortality (Public Health Agency of Canada, 2013).

Key Findings:

- The majority of survey respondents (94%) reported that they have informal social support systems in place – people they can rely on when they need help.
- The proportion of CVRD residents (64%) surveyed who reported a strong sense of community belonging was less than the provincial average (72%). North Cowichan and the Northern Electoral Areas reported the highest proportion of residents who felt a strong sense of community belonging (72% and 71%, respectively).
- The vast majority of residents (98 – 100%) surveyed from the Town of Ladysmith and the Western Electoral Areas reported at least some sense of community belonging.
- In 2011, the proportion of single mothers in the CVRD was comparable to the provincial average (21%). The City of Duncan and First Nations communities had the highest proportions of single mothers in the region, 36% and 32%, respectively.
- In 2011, First Nations communities in the CVRD had the highest proportion of single fathers (15%), close to 10 percentage points above the provincial average.
- The proportion of individuals in the CVRD who were married or living in common law in 2011 (61%) and individuals who were separated/divorced/widowed (17%) were comparable to provincial averages. The City of Duncan had the lowest proportion of married or living in common law relationships and the highest proportion of separated/divorced/widowed individuals.
- First Nations communities had the highest proportion of individuals who were single or never married in 2011 (63%), a significant 36 percentage points above the provincial average. The Electoral Areas also had higher proportions of individuals who were single or never married (33 – 38%).
- In 2011, the average proportion of seniors (aged 65 and over) living alone in the CVRD was 81%. The City of Duncan reported the highest proportion (92%), 14 percentage points above the provincial average. First Nations communities, on the other hand, reported significantly lower rates of seniors living alone (21%), a promising trend for seniors in these communities.

Table 8: Social Support Indicator Overview

Indicator Name	Description	Relevance to Health and Well-being
<i>Community and Social Support Networks</i>		
Sense of social support	<ul style="list-style-type: none"> The perceived sense of social support for individuals across the region. Having people to confide in or go to for help. 	<ul style="list-style-type: none"> Having people in the community to confide in, help solve problems, and provide support gives people a greater sense of satisfaction and overall well-being (Public Health Agency of Canada, 2013).
Sense of community belonging	<ul style="list-style-type: none"> Identifies people’s sense of belonging to their communities. 	<ul style="list-style-type: none"> Research shows that social engagement can lead to increased health outcomes and reduced mortality rates (Holt-Lunstad, 2010).
<i>Families and Households</i>		
Lone parent families	<ul style="list-style-type: none"> The percentage of lone parent families in the region (separated by male and female lone-parent families). 	<ul style="list-style-type: none"> The structure of families (single-parent versus two-parent) is less important to a child’s health and well-being than the environment that a child experiences. For instance, a calm and loving lone-parent home can provide a healthier environment for a child than a conflicted two-parent family (Underdown, 2007). However, single-parents often face greater financial challenges due to the difficulty of balancing employment and childcare responsibilities and lower income persons are at higher risk of poorer health outcomes (Public Health Agency of Canada, 2013). <p>Single female parents in Canada are three times as likely to be poor than single male parents (21% versus 7% in 2008) (Statistics Canada, 2011a).</p>

Indicator Name	Description	Relevance to Health and Well-being
Relationship status	<ul style="list-style-type: none"> The percentage of people in the region who are married or living with a common law partner compared with those who have never been married and those who have undergone a change in relationship status (divorce, separation, widowed). 	<ul style="list-style-type: none"> Relationship status can impact an individual’s overall health and well-being. Studies of Canadian families and households suggest that life strains tend to be more significant for individuals who are single versus those who are married or living with common law partners (Marks & Lambert, 1996). <p>Individuals who have undergone a relationship change, such as divorce, separation, or widowhood, tend to experience negative effects to their psychological well-being (Ibid).</p> <p>However, there are also some cases where single individuals reported better well-being than those in relationships due to greater autonomy and personal growth (Ibid).</p>
Seniors living alone	<ul style="list-style-type: none"> The percentage of seniors in the region who live alone as opposed to living with relatives or non-relatives. 	<ul style="list-style-type: none"> Seniors living alone face a greater risk of falls, are more prone to malnutrition, and have a higher risk of depression due to loneliness and isolation (Public Health Agency of Canada, 2010). Those without social support networks also may be more likely to engage in high-risk activities as they don’t have people to turn to for emotional or physical support (Ibid).

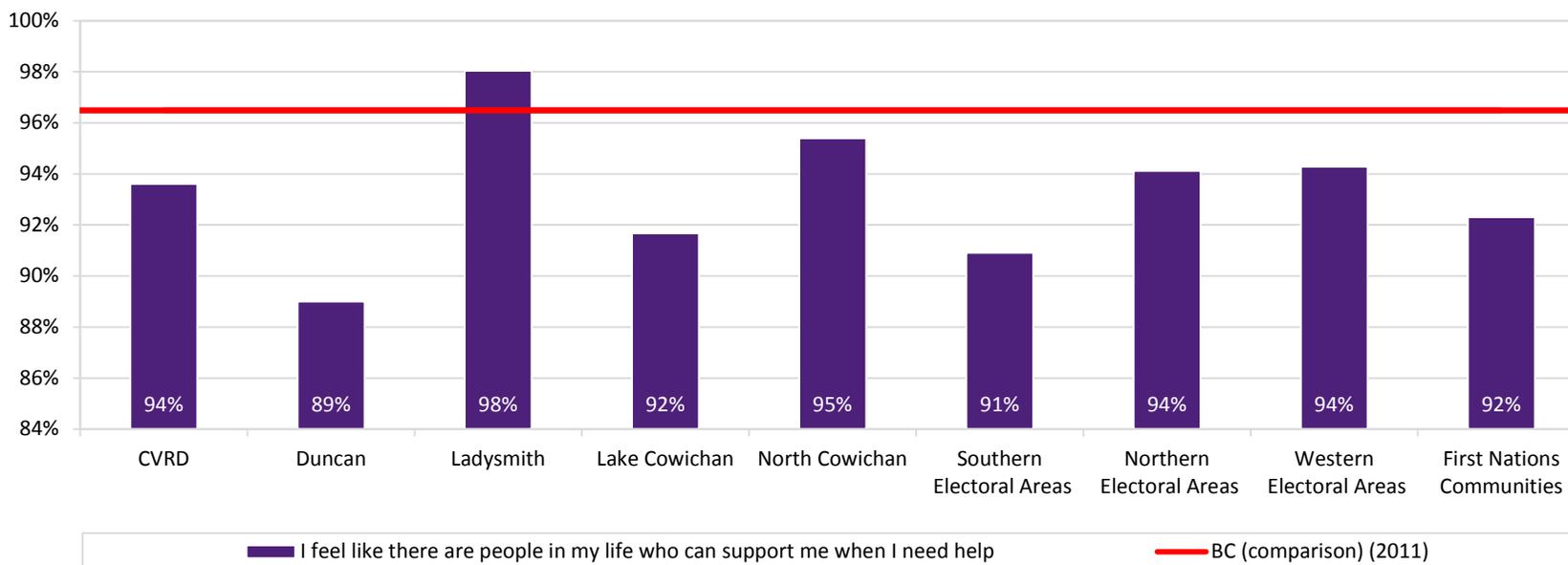
Community and Social Support Networks

Sense of Social Support

The Cowichan Community Health Survey asked respondents if they had people in their life that could support them when they needed help. Of the 582 respondents who answered the question, the majority of respondents (94%) reported they had social support systems in place. Statistics Canada asked this same question in the 2011 Canadian Community Health Survey and the BC average was 96%, a similar result as the CVRD.

However, certain CVRD communities, such as the City of Duncan, have higher proportions of people without informal social support who therefore, may be more reliant on formal healthcare and social support systems. Ladysmith was the only area in the CVRD to exceed the provincial average; nearly all survey respondents from this community had someone in their life they could rely on for support.

Figure 29: Sense of Social Support (2014)



Source: Cowichan Community Health Survey, 2014; Statistics Canada, 2011b.

Note: See Data Sources section (page 8) for details on survey respondents.

Sense of Community Belonging

The majority of respondents (64%) from the voluntary CVRD Community Health Survey reported a strong sense of community belonging. North Cowichan and the Northern Electoral Areas were closer to the provincial average of 72% while other communities

such as the Southern Electoral Areas, First Nations communities, Town of Lake Cowichan, and City of Duncan were over 12 percentage points lower than the provincial average.

Figure 30: Strong Sense of Community Belonging (2014)

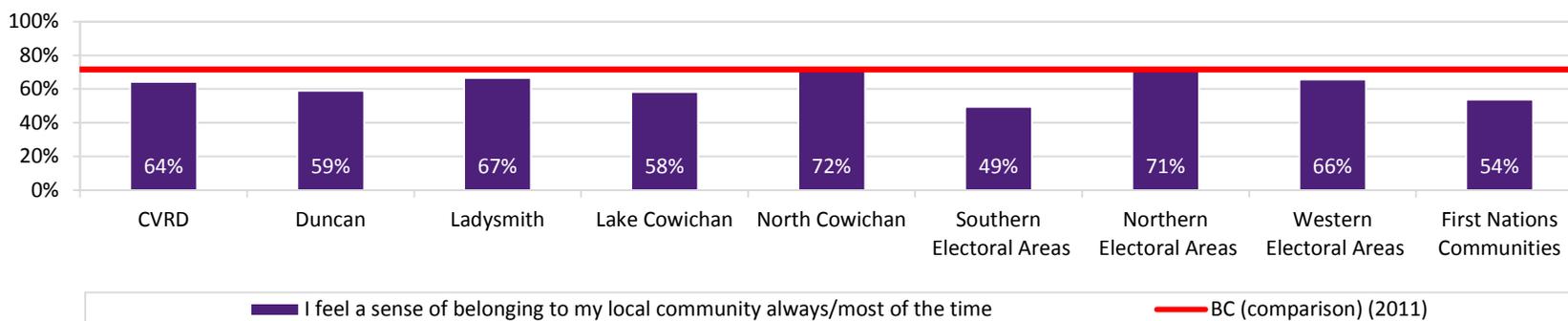
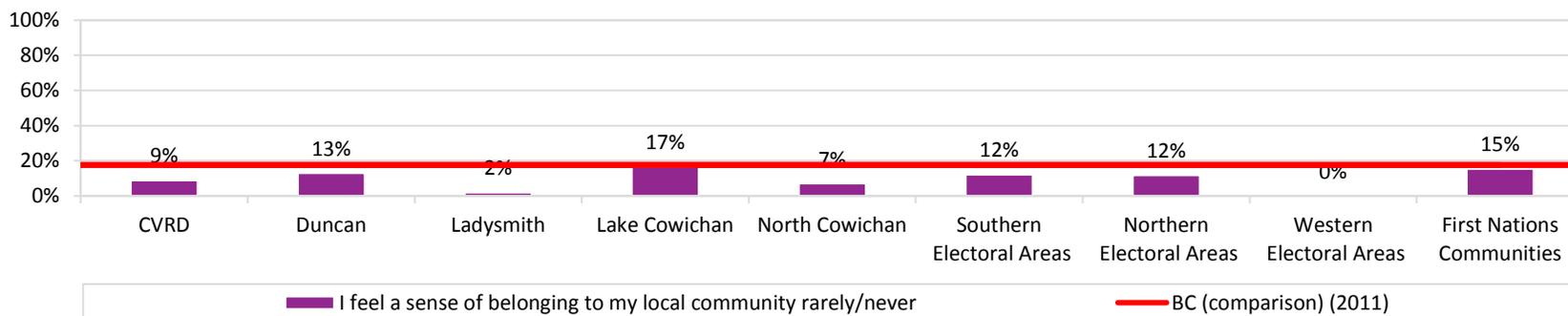


Figure 31: Weak Sense of Community Belonging (2014)



Source: Cowichan Community Health Survey, 2014; Statistics Canada, 2011b.
 Note: See Data Sources section (page 8) for details on survey respondents.

Families & Households

Lone Parent Families

Lone parent families make up approximately one quarter of all families in the CVRD. The proportion of female lone-parent families is highest in the City of Duncan and First Nations communities.

Female lone-parent families are three to four times more common than male lone-parent families in the CVRD, with the exception of First Nations communities where there are nearly twice as many male lone-parent families than other communities.

Figure 32: Female Lone-Parent Families (2001 to 2011)

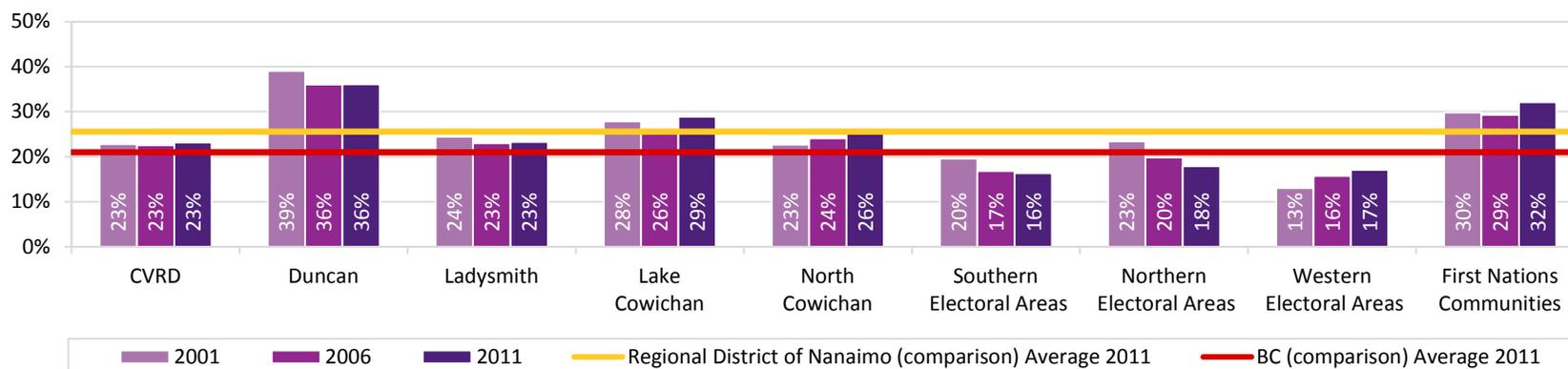
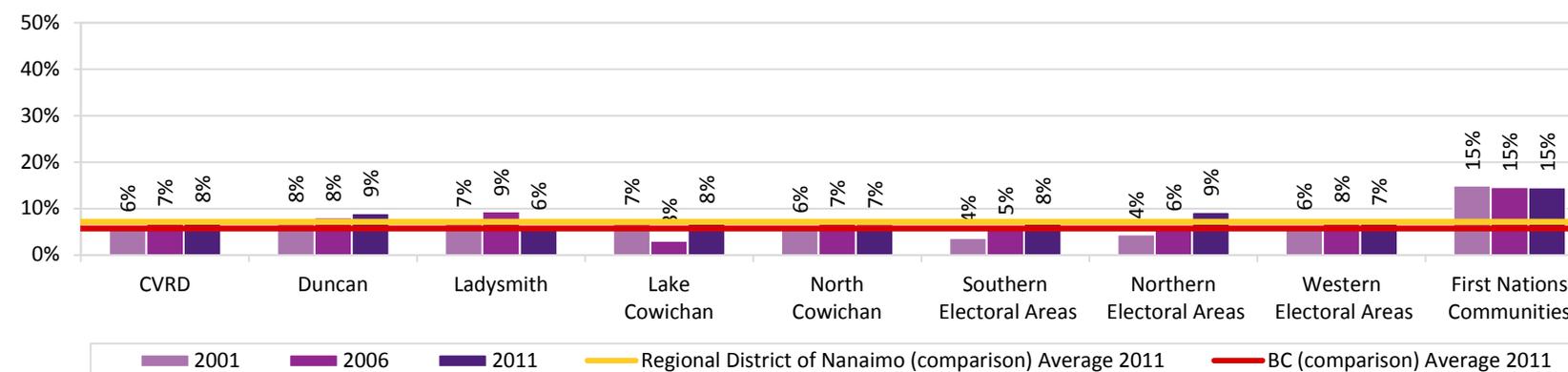


Figure 33: Male Lone-Parent Families (2001 to 2011)



Source: Calculated from Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2012a.

Relationship Status

Individuals who are married or living with a common law partner represent approximately 60% of the population in the region, quite similar to that of the province and the Regional District of Nanaimo. Individuals in long-term relationships are less common in the City of Duncan and in First Nations communities and slightly more common in the Southern and Northern Electoral Areas.

The proportion of individuals who are single and have never been married is highest in First Nations communities. However, it should be noted that these statistics are for individuals aged 15

and over so communities with higher proportions of youth and young adults (such as First Nations communities) may therefore have higher proportions of singles. The average age at first marriage for Canadians has increased in recent decades; as of 2008, the average age of first marriage for men and women was 31 and 29, respectively (Employment and Social Development Canada, 2014).

Individuals who have undergone relationship changes, such as separation, divorce, or widowhood, are fairly similar across the region with a slightly higher proportion in the City of Duncan.

Figure 34: Percentage of Population Aged 15 and Over - Married or Living with Common Law Partner (2001 to 2011)

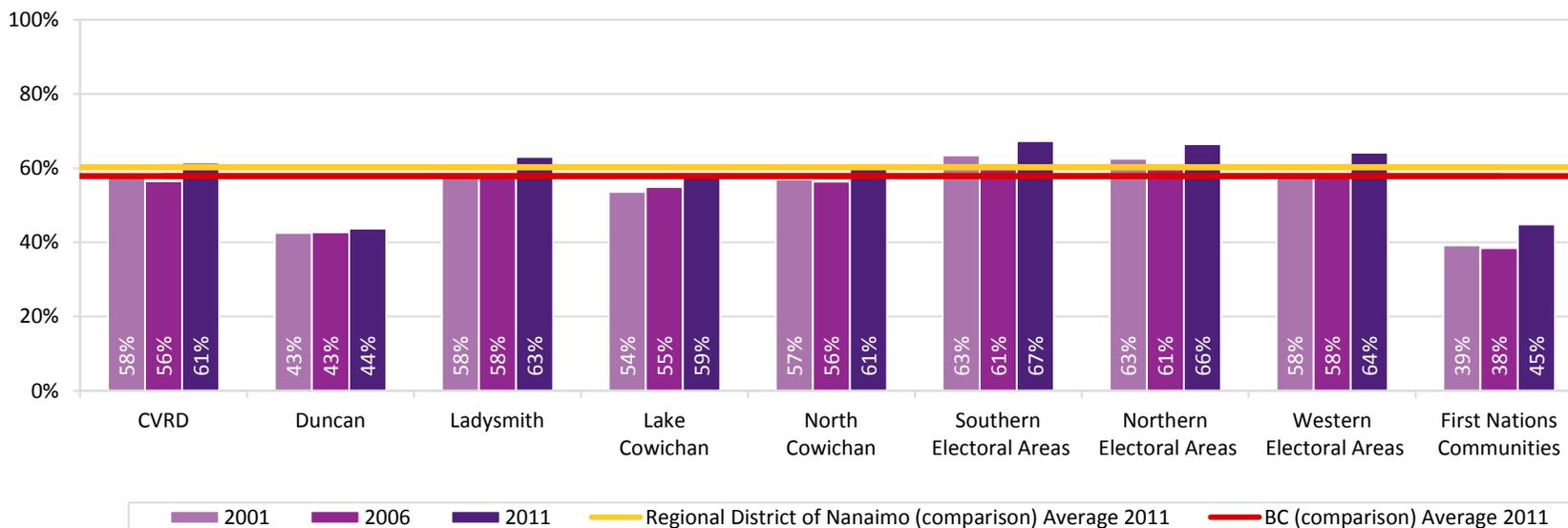


Figure 35: Percentage of Population Aged 15 and Over – Single, Never Married (2001 to 2011)

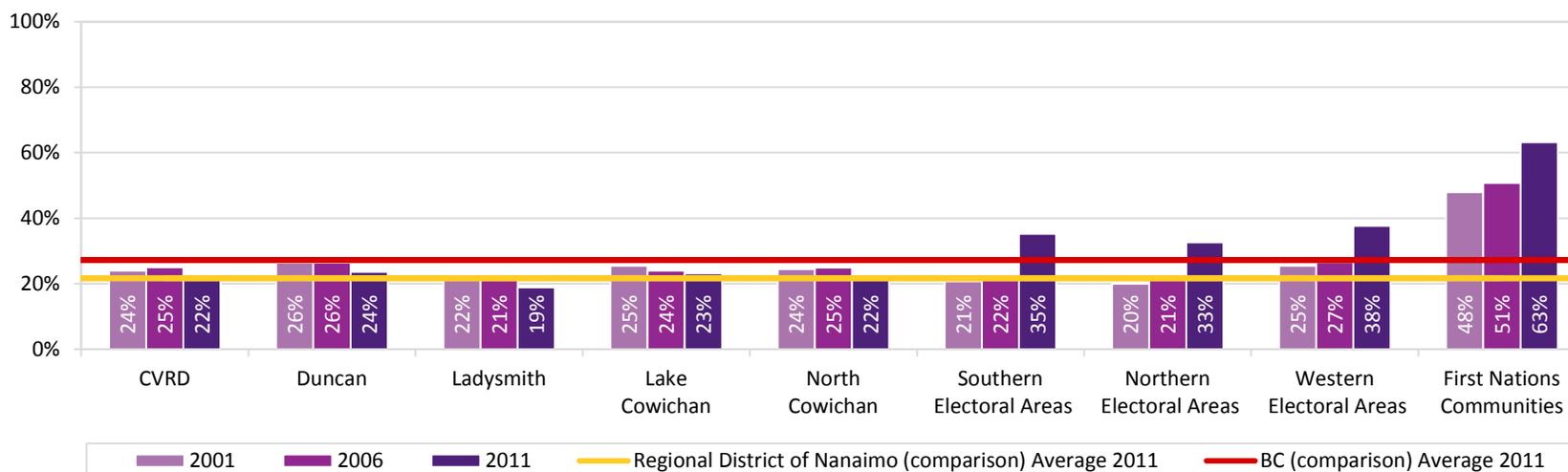
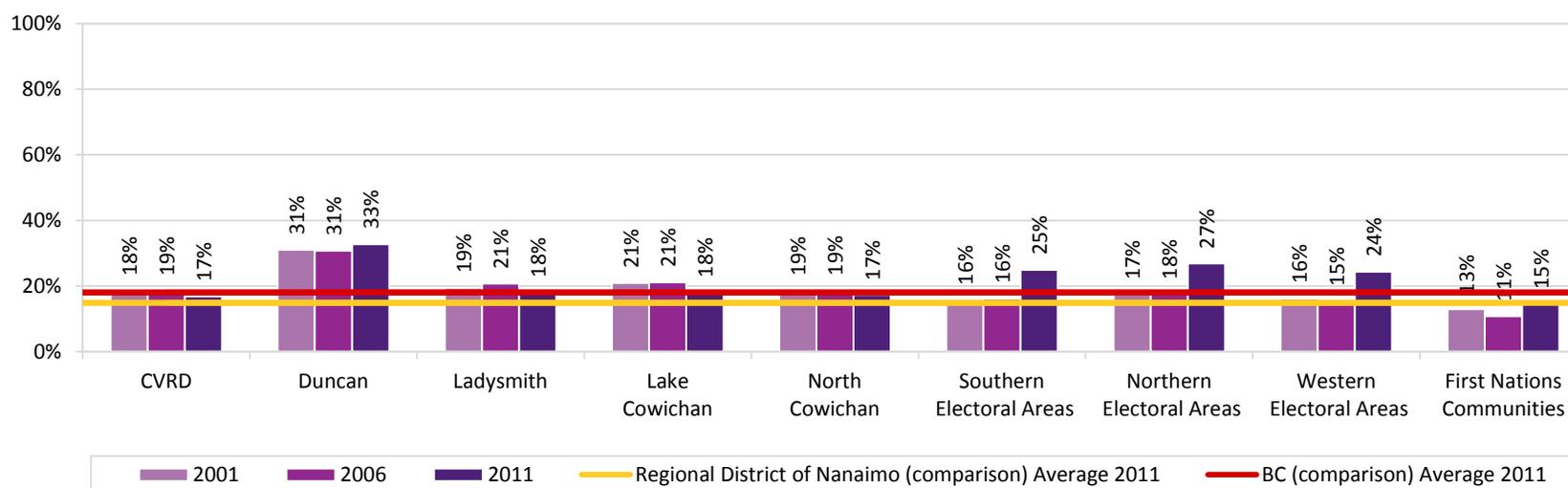


Figure 36: Percentage of Population Aged 15 and Over – Separated, Divorced, or Widowed (2001 to 2011)



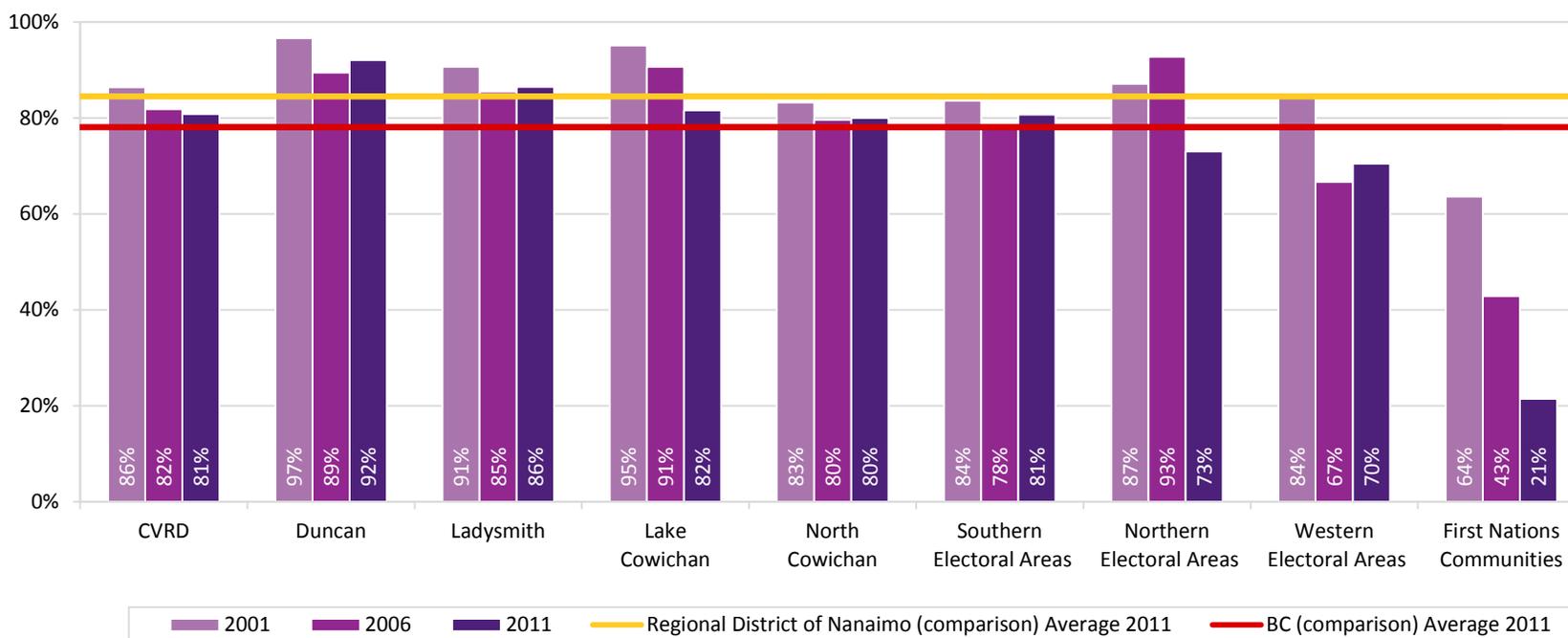
Source: Calculated from Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2012a.

Seniors Living Alone

Seniors who live alone represent approximately 80% of the population aged 65 and over in the region. This is just above the provincial average (in 2011) and just under the average for the Regional District of Nanaimo (in 2011). Seniors in the City of

Duncan are more likely to live alone than in other communities across the region. Seniors in First Nations communities are more likely to live with others (relatives or non-relatives); a trend that has increased significantly since 2001.

Figure 37: Percentage of individuals 65 and over living alone (2001 to 2011)



Source: Calculated from Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2012a.



Key Determinant 3: Education & Literacy

Effective education, starting in infancy and through adulthood, is a key contributor to health. Education and literacy contributes to wealth and health by equipping people with the skills needed to problem solve and have a sense of control over their lives (Public Health Agency of Canada, 2013).

Educational attainment has far-reaching effects on an individual's socio-economic status, increasing opportunities for employment, and the ability to access and understand information (Ibid). In addition, people with higher levels of education tend to have better access to healthy environments, make healthier lifestyle choices such as not smoking, and are better able to prepare their children for school (Ibid).

Key Findings:

- High school six year graduation rates rose by 10 percentage points between 2008 and 2012 in the Cowichan Valley School District, narrowing the gap between the Cowichan Valley and the province.
- The percentage of individuals without a high school diploma was higher in CVRD communities than the province as a whole in 2011.
- Among the Aboriginal population of the CVRD, the proportion without high school diplomas remained consistent in 2001 and 2011, and was 11 percentage points above the BC average in 2011.
- The proportion of trade, college and university graduates in the CVRD remained consistent between 2001 and 2011, at approximately 50%.
- Between 2001 and 2011, the proportion of the population in Duncan, Lake Cowichan, and the Northern Electoral Areas and First Nations communities with post-secondary qualifications declined.
- The Town of Ladysmith was the only community to see consistent increases in the proportion of trade, college and university graduates between 2001 and 2011, with an overall increase of over five percentage points.
- There are a number of successful literacy programs throughout the region for families, children, youth, and adults. However, the majority of programs are located in the City of Duncan and Stz'uminus (Chemainus) and there are no programs located in Ladysmith or in the Northern or Western electoral areas. There is also a lack of programs for school-aged children (6 – 12) and programs specifically for street youth (youth who are homeless or at risk of becoming homeless).
- Key barriers for organizations hosting literacy programs include a lack of funding, lengthy wait lists, a lack of awareness of existing programs, a lack of coordination among agencies, and a lack of materials for beginners.
- Key barriers for literacy program participants include personal financial concerns, transportation/location, and social/cultural stigmas.

Table 9: Educational & Literacy Indicator Overview

Indicator Name	Description	Relevance to Health and Well-being
<i>Educational Attainment</i>		
Percent of total population aged 15 years and over with post-secondary qualifications	<ul style="list-style-type: none"> ▪ The percentage of the general population that has graduated from a trade, college, or university program. 	<ul style="list-style-type: none"> ▪ Those with post-secondary education are less likely to be unemployed, which contributes to better health outcomes (Public Health Agency of Canada, 2013).
Percent of total population aged 15 years and over without a high school diploma	<ul style="list-style-type: none"> ▪ The percentage of the general population that has not graduated from high school or a high school-equivalent program. 	<ul style="list-style-type: none"> ▪ Those who fail to complete secondary education are more likely to be unemployed and face poor health outcomes (Region of Waterloo Public Health, 2011).
Percent of Aboriginal population aged 15 years and over without a high school diploma	<ul style="list-style-type: none"> ▪ The percentage of the Aboriginal population that has not graduated from high school or a high school-equivalent program. 	
High school six year graduation rate	<ul style="list-style-type: none"> ▪ The percentage of students that has completed a four-year high school program within six years (i.e. within 150% of the normal time for completion). 	<ul style="list-style-type: none"> ▪ Identifies students who are at risk of not completing their secondary education. Those who fail to complete secondary education are more likely to be unemployed and face poor health outcomes (Region of Waterloo Public Health, 2011).
<i>Literacy</i>		
Literacy Assets	<ul style="list-style-type: none"> ▪ Identifies key literacy resources for families and street youth within the region. 	<ul style="list-style-type: none"> ▪ Those with lower literacy skills are more likely to be unemployed and face poor health outcomes (Public Health Agency of Canada, 2013).
Literacy Gaps	<ul style="list-style-type: none"> ▪ Identifies key gaps in literacy resources within the region. 	

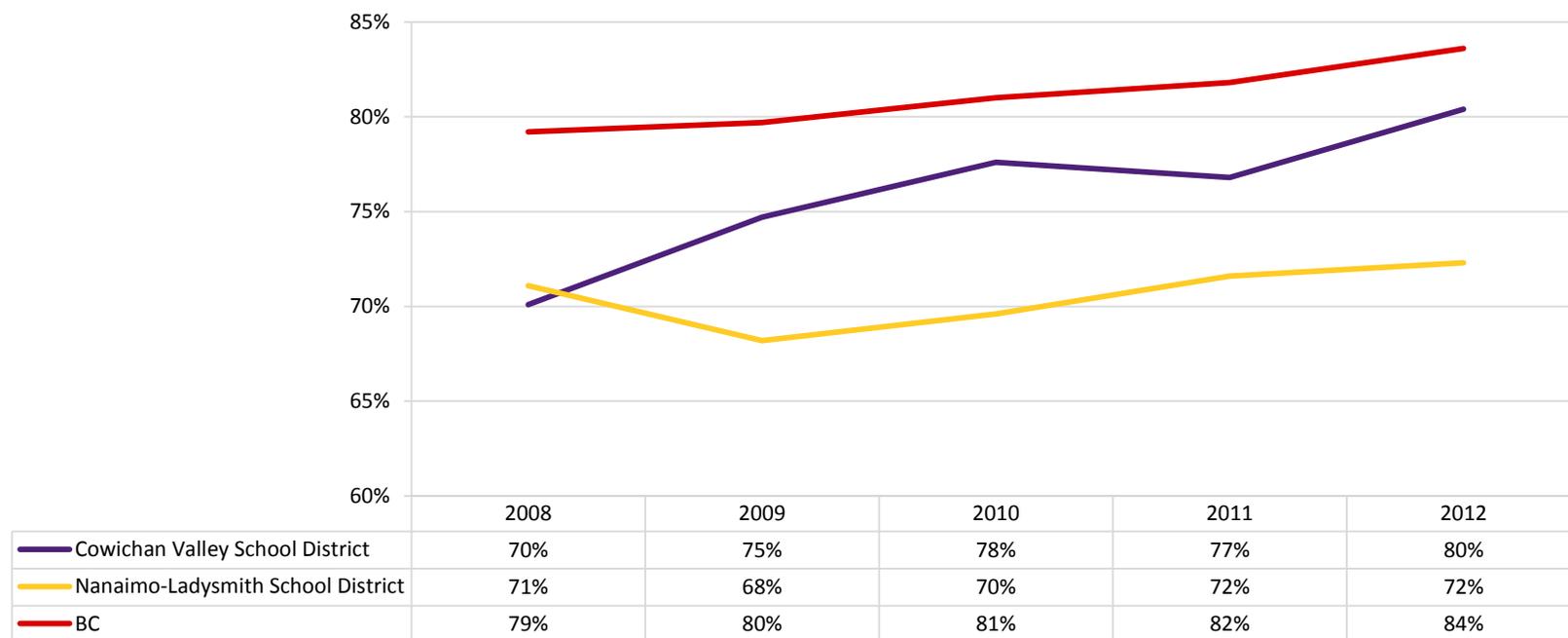
Educational Attainment

High School Six Year Graduation Rate

Information on the high school six-year graduate rates for the Cowichan Valley, Nanaimo-Ladysmith, and BC school districts is provided below. Graduation rates in the Cowichan Valley have steadily improved, rising by 10.3 percentage points between 2008 and 2012. The gap in six year graduation rates between BC

and the Cowichan Valley was over 9 percentage points in 2008, but this disparity dropped to just over 3 percentage points in 2012. Completion rates in the Cowichan Valley exceeded those in Nanaimo-Ladysmith from 2009 to 2012, although they have remained below provincial levels for each year presented.

Figure 38: High School Six Year Graduation Rate (2008 to 2012)



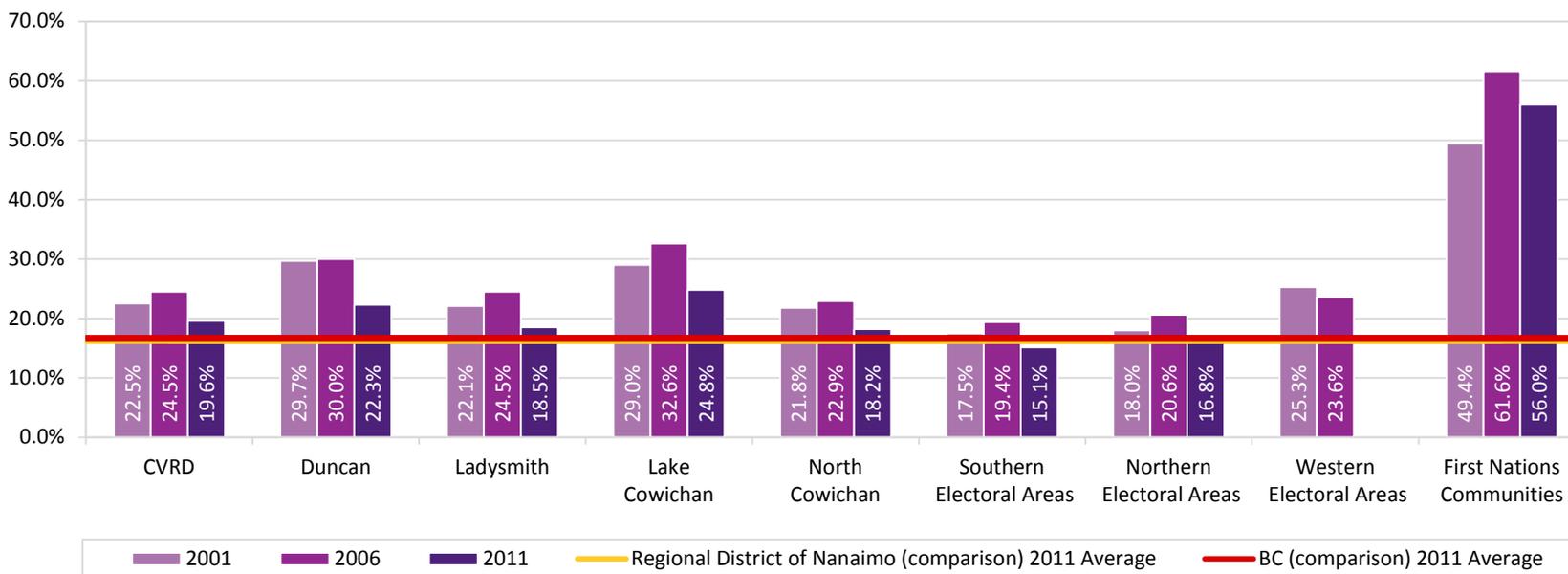
Source: BC Ministry of Education 2013a; BC Ministry of Education 2013b; BC Ministry of Education 2013c

Total Population without a High School Diploma

The proportion of CVRD residents without high school diplomas has decreased slightly from 22.5% in 2001 to 19.6% in 2011, but still sits above the provincial average of 16.7%. In 2011, all CVRD communities except the Southern Electoral Areas experienced lower educational attainment rates than the Regional District of Nanaimo and the province as a whole. Between 2001 and 2011, non-completion rates decreased in the City of Duncan, Town of

Ladysmith, Lake Cowichan, North Cowichan, and the Electoral Areas, but increased by over 6 percentage points in First Nations communities over the same time period. Over half of First Nations community residents aged 15 and over had not earned a high school diploma in 2011, close to 40 percentage points higher than the BC average. Electoral Areas had the lowest number of residents without high school diplomas.

Figure 39: Percentage of Total Population without a High School Diploma (2001 to 2011)



Source: Calculated from Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2013a

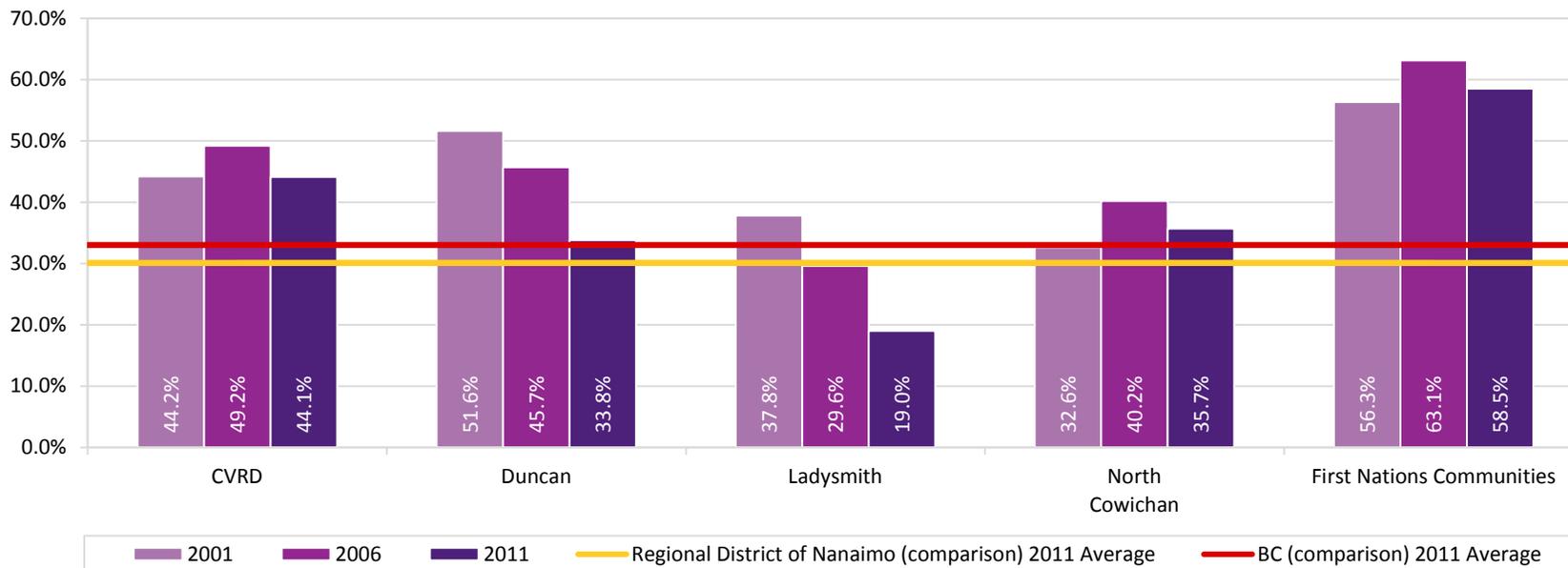
Note: In 2011 and 2006, educational data was published for populations 15 and over. In 2001, Statistics Canada only published educational data for populations aged 20 and over.

Aboriginal Population without a High School Diploma

Among the Aboriginal population of the CVRD, the proportion without high school diplomas remained consistent in 2001 and 2011, at approximately 44%. Compared to the Aboriginal population of BC, the CVRD performed worse at 11 percentage points above the BC average (33%). Within the CVRD, the Aboriginal population in the City of Duncan and Town of Ladysmith saw consistent improvement on this indicator, as the percentage without a high school diploma declined between 2001

and 2011. In 2011, the proportion of the Aboriginal population without a high school diploma in the City of Duncan was comparable with the BC average, while Ladysmith performed better at 14 percentage points below the BC average. The proportion of Aboriginal individuals without a high school diploma was highest in First Nations communities, where access to schools and transportation is more challenging.

Figure 40: Percent of Aboriginal Population without a High School Diploma (2001 to 2011)



Source: Calculated from Statistics Canada 2002b; Statistics Canada 2007b; Statistics Canada 2013b

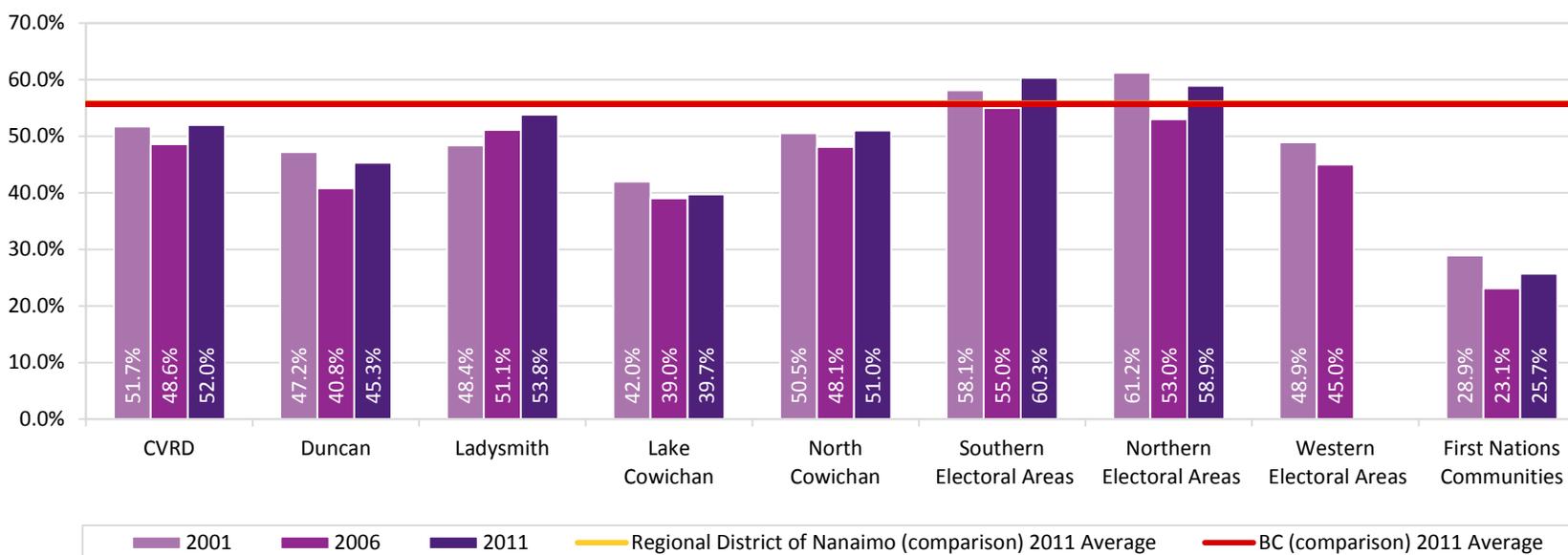
Note: In 2011, Statistics Canada published educational data for the population aged 25 and over. In 2006 and 2011, data was for the population aged 15 and over.

Total Population with Post-secondary Qualifications

Post-secondary qualifications refer to trade certificates or college/university certificates, diplomas, or degrees. The proportion of trade, college and university graduates in the CVRD increased slightly between 2001 and 2011, from 48.6% to 52% but remained below the BC average (55.7%) and the Regional District of Nanaimo's average (55.8%). In 2011, post-secondary

attainment rates ranged in the CVRD from 25.7% in First Nations communities to 60.3% in the Southern Electoral Areas. Between 2001 and 2011, the proportion of the population in the City of Duncan, Town of Lake Cowichan, and the Northern Electoral Areas and First Nations communities with post-secondary qualifications declined.

Figure 41: Percent of Total Population with Post-secondary Qualifications (2001 to 2011)



Source: Calculated from Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2013a

Note: In 2011 and 2006, educational data was published for populations 15 and over. In 2001, Statistics Canada only published educational data for populations aged 20 and over.

Literacy

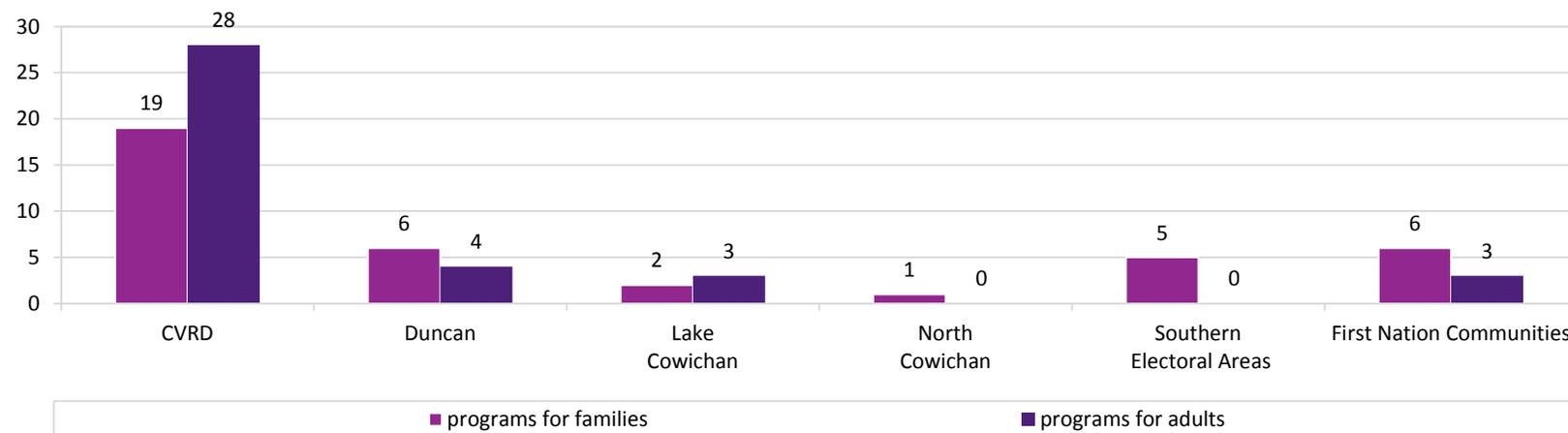
Literacy assets and gaps for the Cowichan Region have been identified through Literacy Now Cowichan’s 2013 Report (Social Planning Cowichan, 2013). The report identifies valuable resources for families and street youth. A summary of literacy gaps and barriers is provided in Table 10.

Literacy Assets

Literacy assets include a range of drop in and registered programs for children, parents, and adults (including young adults). They include a variety of programs for language, reading, writing, culture, emotional, and social support and are located in

communities throughout the region. There are also two literacy programs under development that are not included in Figure 42 below. These include a cultural, social and language based program through the Malahat Nation Cultural Resource Centre for members of the Malahat Nation and the Children’s Play and Discovery Centre in Duncan with free language and social programs for families. In addition, there are a number of agencies throughout the region who provide literacy support and drop in space as a part of their work.

Figure 42: Number of Literacy Programs (2013)



Source: Social Planning Cowichan, 2013.

Literacy Gaps

Literacy Now Cowichan identified a number of important literacy gaps and barriers for the Cowichan region which are summarized in the table below.

Table 10: Literacy gaps and barriers in the CVRD

Literacy Gaps	Barriers
<ul style="list-style-type: none"> ▪ With respect to location and distribution of resources, not all communities have accessible programs; many resources are located in the City of Duncan and Stz’uminus (Chemainus) and there are no programs located in Ladysmith or in the Northern or Western electoral areas. ▪ Limited number of programs for families with school-aged children (aged 6 – 12). ▪ No programs specifically for street youth. ▪ Vulnerable families are not utilizing these programs as much as other groups. Generally speaking, those who would benefit most from literacy programs are not the ones attending. ▪ Lack of support to help people access services. This includes support for filling out forms for government issued identification, income assistance, and support for children with disabilities. ▪ Lack of focus on current technology such as social media. ▪ Lack of support for digital literacy, particularly related to accessing online services and government support. 	<ul style="list-style-type: none"> ▪ Program Barriers <ul style="list-style-type: none"> ▪ Lack of funding and resources for programs/organizations ▪ Lack of coordination among agencies (i.e., timing, location, and delivery of programs) ▪ Lengthy wait lists for popular programs ▪ Lack of beginner materials ▪ Lack of awareness of existing programs ▪ Lack of trust in agencies and institutions ▪ Participant Barriers <ul style="list-style-type: none"> ▪ Personal financial concerns – day to day needs outweigh other priorities ▪ Transportation and accessibility - mobility within and between communities a big issue in the region ▪ Location - programs need to be offered at the neighbourhood level where people feel comfortable accessing them ▪ Social and cultural stigmas - offering programs at familiar locations such as libraries can help to address these issues



Key Determinant 4: Employment & Working Conditions

Active labour force participation has a significant effect on the mental and physical health of workers and their families. Paid work not only provides income necessary to meet health needs, but also provides a sense of identity and purpose, opportunities for personal growth, and supportive social contacts.

Unemployed persons have lower life expectancies and suffer more health problems than people who have jobs (Public Health Agency of Canada, 2013). Conversely, better health enables more people to participate in the economy, reducing the costs of lost productivity (Public Health Association of BC, 2008).

Key Findings:

- In 2011, the CVRD had a labour force replacement ratio of 0.60, meaning that for every resident reaching working age in the next 15 years, 1.7 residents are reaching retirement age. This indicates the need for significant in-migration to maintain the region's labour force, especially as the CVRD performs poorly with youth retention.
- First Nations communities have a significantly higher labour force replacement ratio (2.09) which is a promising trend for the future of these communities.
- The labour force participation rate in the CVRD was stable around 60% between 2001 and 2011, but was close to 50% in the City of Duncan, Town of Lake Cowichan, and the Northern Electoral Areas and less than 50% in First Nations communities.
- The majority of workers in the CVRD held full-time positions in 2011 although the region had a higher proportion of part-time workers (25.6%) compared to the provincial average (21.9%).
- The Employment Insurance (EI) recipient rate in the CVRD was above the BC average between 2009 and 2013, but rates converged between 2012 and 2013 as the EI recipient rate declined in the CVRD and increased in BC.
- The EI recipient rate in the City of Duncan was consistently the highest within the CVRD between 2009 and 2013.

Table 11: Employment and Working Conditions Indicator Overview

Indicator Name	Description	Relevance to Health and Well-being
<i>Labour Force Participation</i>		
Labour force replacement ratio	<ul style="list-style-type: none"> A ratio comparing the number of people aged 0 to 14 who will be entering the workforce to the working population aged 50 to 64 who will be retiring from the workforce in the following 15 years. 	<ul style="list-style-type: none"> Economic instability, including labour force instability, can contribute to poor physical and mental health (Public Health Agency of Canada, 2013).
Labour force participation rate	<ul style="list-style-type: none"> The percentage of working-age persons who are employed or unemployed but seeking employment. 	<ul style="list-style-type: none"> Research shows that employment positively affects physical and mental health (Public Health Agency of Canada, 2013).
Aboriginal labour force participation	<ul style="list-style-type: none"> The percentage of Aboriginal people who are employed or unemployed but seeking employment. 	
<i>Unemployment & Underemployment</i>		
Ratio of full time to part-time jobs	<ul style="list-style-type: none"> The percentage of the labour force that is employed part-time compared to the percentage of the labour force that is employed full-time. 	<ul style="list-style-type: none"> Unemployment and underemployment are associated with poorer health (Public Health Agency of Canada, 2013).
Employment insurance recipient rate	<ul style="list-style-type: none"> The percentage of residents aged 15 to 64 years accessing provincial employment insurance benefits. 	<ul style="list-style-type: none"> People receiving social assistance tend to have lower health outcomes (Public Health Association of BC, 2008).

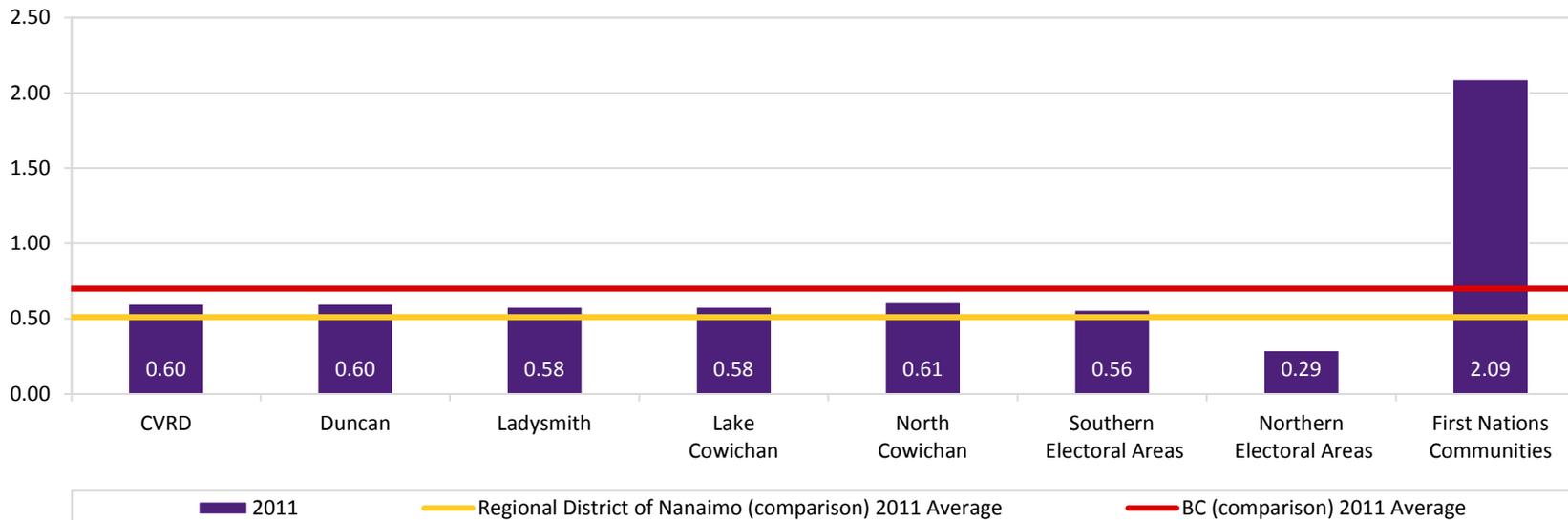
Labour Force Participation

Labour Force Replacement Ratio

The labour force replacement ratio describes the number of young people reaching employment age relative to the number of those reaching retirement age in the next fifteen years. The closer this ratio is to one (1.0), the more likely the community will be able to replace retiring workers with new workers who are resident in the region. If an area is not able to maintain its current labour force, it will either have to encourage older workers to stay in the labour force or recruit labour from other areas. If neither solution is sufficient to meet labour demand, economic growth

may be adversely affected. In 2011, the CVRD had a replacement ratio of 0.60, which was below the BC average of 0.70. This suggests that replacing mature workers with new, young workers in these communities could be challenging without in-migration from outside the region and BC. This is especially true for the Northern Electoral Areas which had the lowest labour force replacement ratio. The First Nation communities group had a significantly higher labour force replacement ratio of 2.09, which is a promising trend for local First Nations.

Figure 43: Labour Force Replacement Ratio (2011)



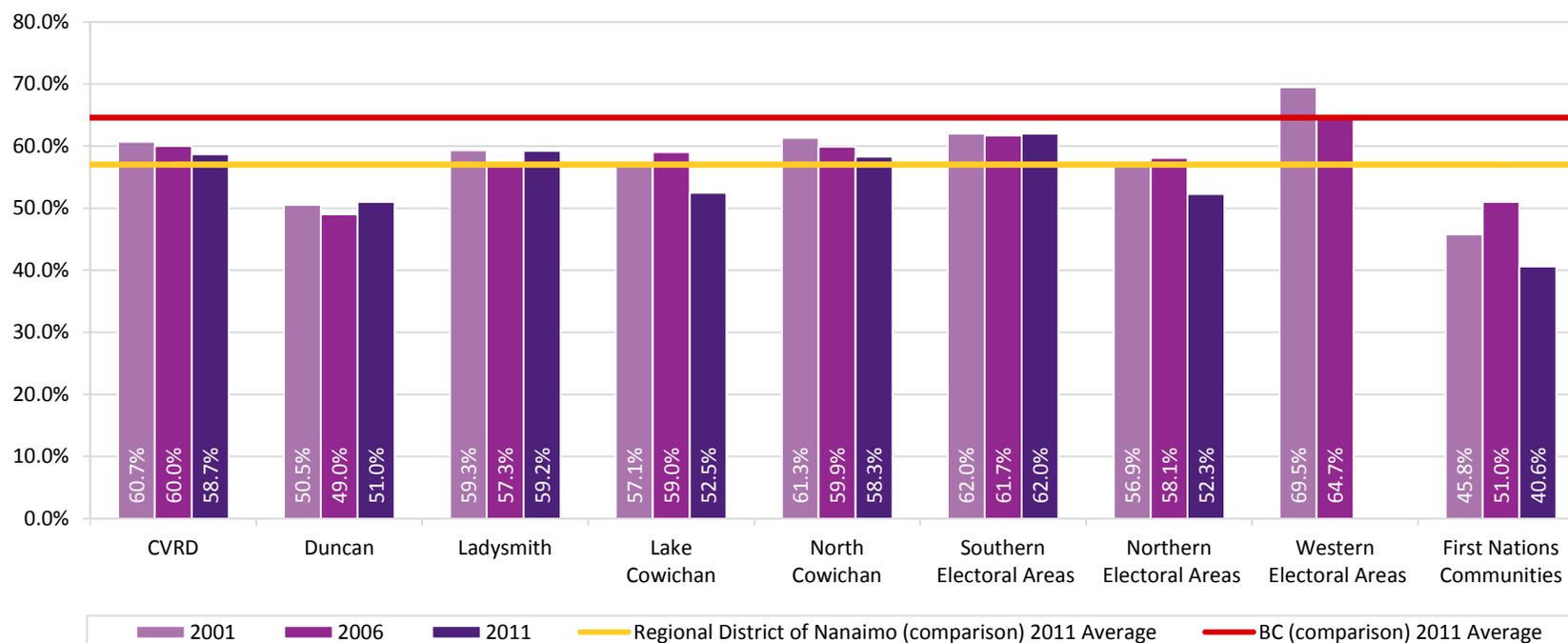
Source: Calculated from Statistics Canada 2012

Labour Force Participation Rate

In 2011, the CVRD had a labour force participation rate of 58.7% which was just above that of the Regional District of Nanaimo, but below BC's average of 64.6%. Labour force participation was lowest in the City of Duncan and in the First Nation communities

group and highest in the Western Electoral Areas. Between 2006 and 2011, the labour force participation rate dropped in Lake Cowichan, North Cowichan, as well as in the Northern Electoral Areas and the First Nation Communities groups.

Figure 44: Labour Force Participation Rate (2001, 2006, and 2011)



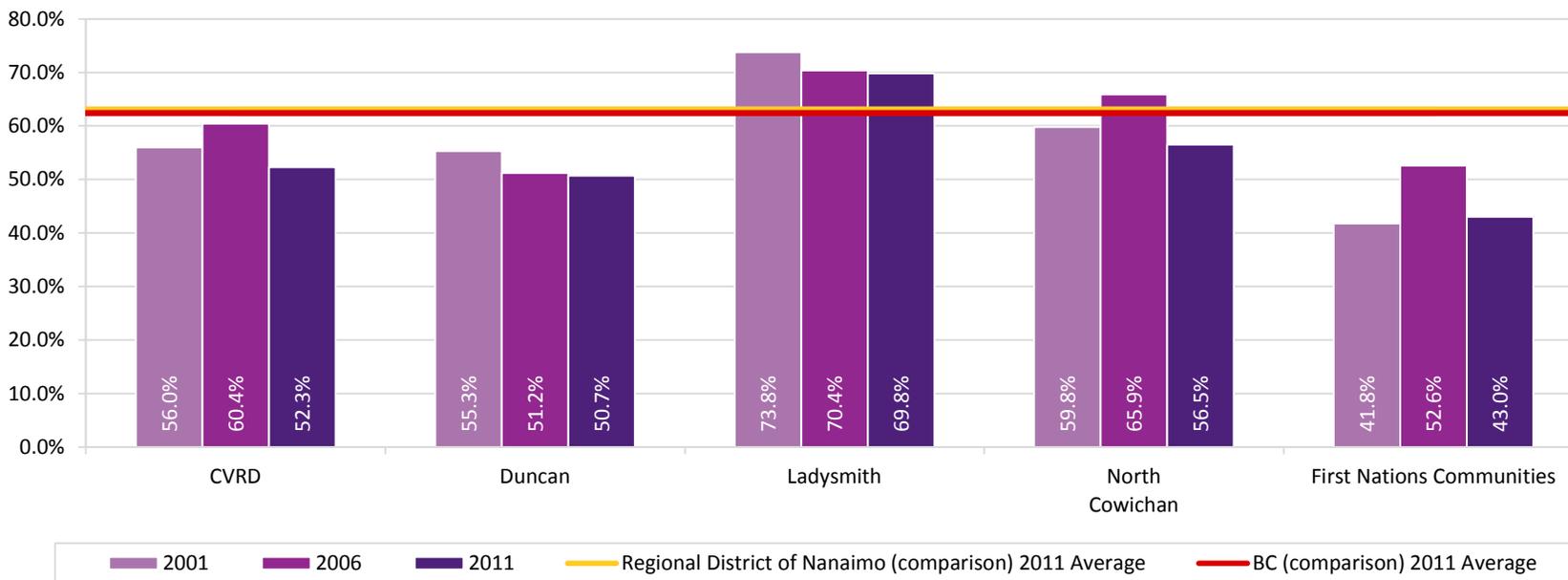
Source: Calculated from Statistics Canada 2002a; Statistics Canada 2007a; Statistics Canada 2013a

Aboriginal Labour Force Participation

Between 2001 and 2011, the Aboriginal labour force participation rate in the CVRD fluctuated between 52% and 60% and fell close to 10 percentage points below the BC rate in 2011. Over the same timeframe, Ladysmith had consistently higher Aboriginal

participation rates than BC as a whole, but the rate declined slightly over the decade. In the First Nation communities group, the labour force participation rate dropped almost 10 percentage points between 2006 and 2011, returning close to the 2001 level.

Figure 45: Aboriginal Labour Force Participation Rate (2001, 2006, and 2011)



Source: Calculated from Statistics Canada 2002b; Statistics Canada 2007b; Statistics Canada 2013b

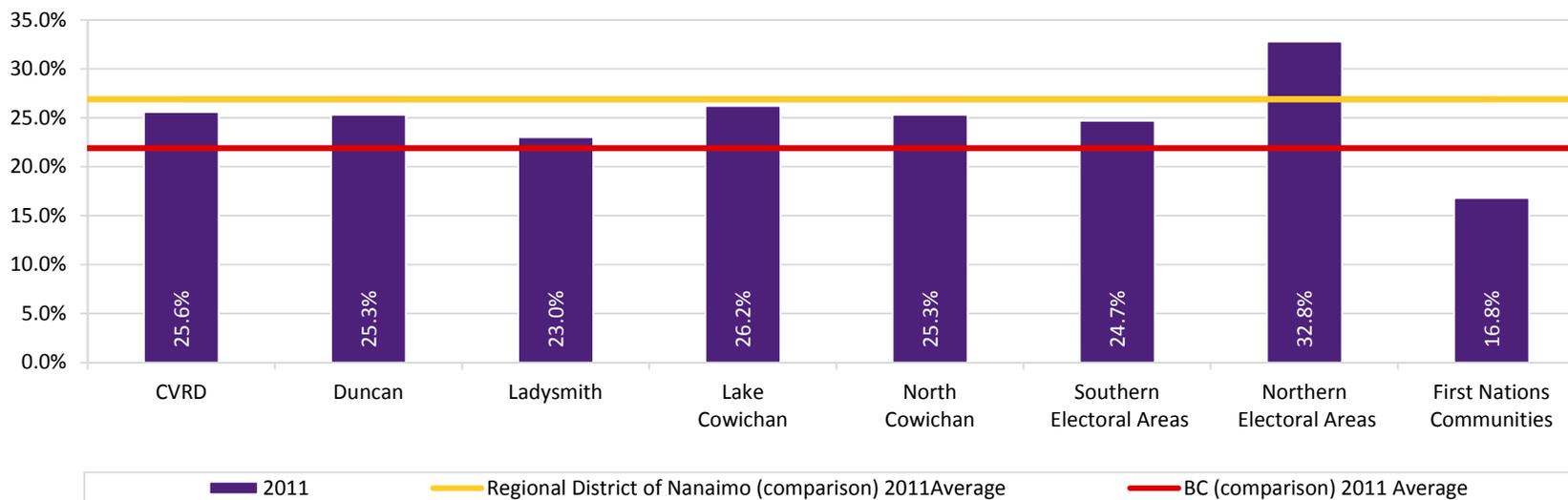
Unemployment and Underemployment

Full-Time and Part-Time Jobs

In 2011, the majority of workers in the CVRD's labour force had full-time positions (68.7%), although a higher proportion of the area's labour force undertook part-time¹¹ employment (25.6%) compared to the province (21.9%). Close to a quarter of the labour force in the City of Duncan, Town of Ladysmith, Town of Lake Cowichan, North Cowichan, and the Southern and Western Electoral Areas were employed part-time, while less than 17% of the labour force in the First Nation communities group had part-time employment. The highest proportion of part-time employment was found in the Northern Electoral Areas in 2011, close to a third of their labour force.

¹¹ Includes employed persons who usually work less than 30 hours per week, at their main or only job (Statistics Canada, 2012).

Figure 46: Percentage of Labour Force in Part-time Positions (2011)



Source: Calculated from Statistics Canada 2013a

Notes:

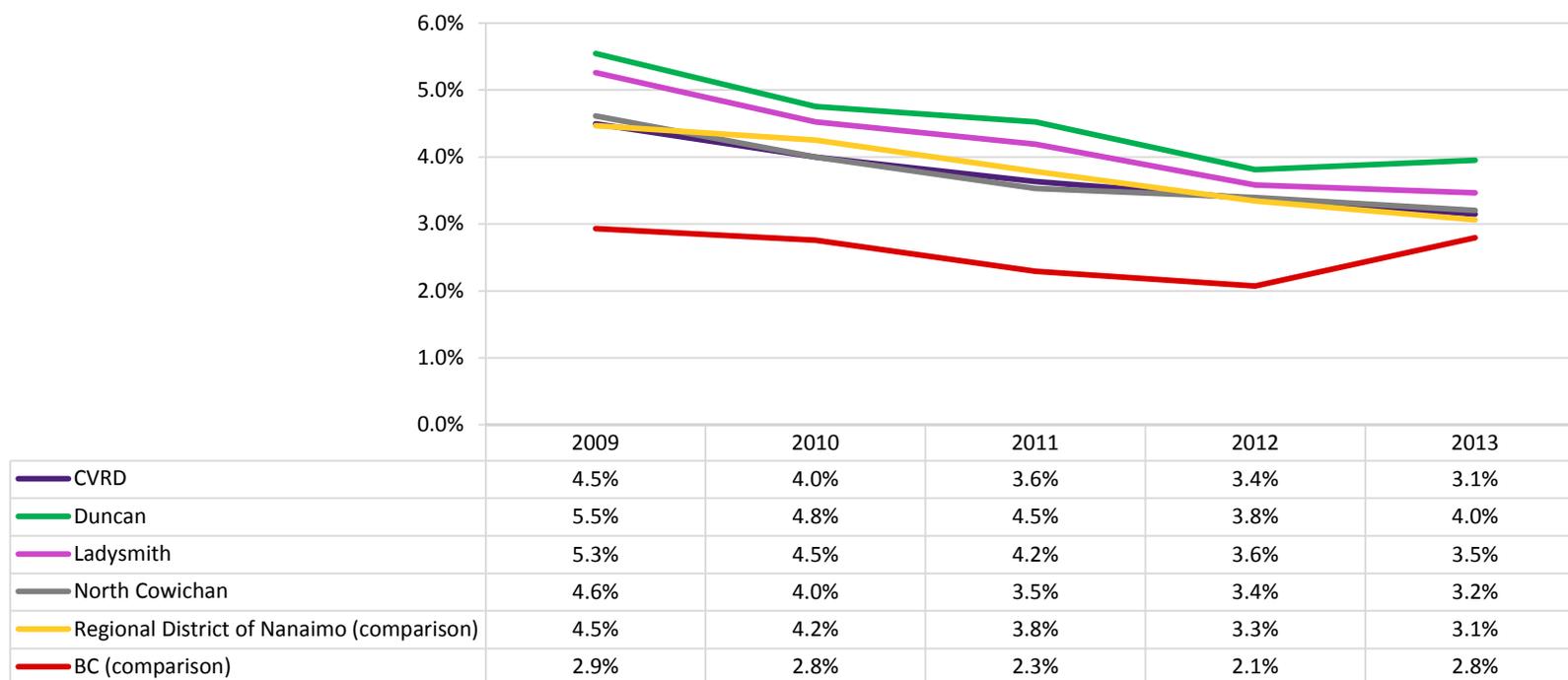
- a) In 2006, part-time working data included individuals that worked both part-time and part of the year. It is not directly comparable with 2011 data, which only identifies workers who worked on a part-time basis.
- b) In 2001, Statistics Canada did not publish data related to the proportion of persons working full-time vs. part-time, therefore it is not reported on above.

Employment Insurance Recipient Rate

Persons who have lost their employment and meet work eligibility conditions can receive financial support benefits through the Employment Insurance (EI) program. The chart below shows EI beneficiaries in the CVRD as a percentage of the population aged 15 to 64 (BC Stats, 2013c). While the CVRD has experienced higher EI recipient rates between 2009 and 2013 compared to the province, the CVRD and BC rates have been converging over time,

as rates declined in the CVRD and the BC rate increased between 2012 and 2013. In 2013, the CVRD had an EI recipient rate of 3.1%, which is roughly similar to the provincial average of 2.8%. Within the CVRD however, the City of Duncan has consistently had the highest EI recipient rate, but it fell from 5.5% in 2009 to 4.0% in 2013.

Figure 47: Employment Insurance Recipient Rate (2009-2013)



Source: Calculated from BC Stats 2014; Statistics Canada 2014a



Key Determinant 5: Social Environments

A healthy community can be characterized as one in which there is a high level of citizen action and engagement (Hancock, 1999 as cited in VCH, 2009). Social stability, strong social policies, and safe and cohesive communities can reduce risks to individual health and well-being (Ibid). By looking at health as a shared concern, communities can address broader social issues as well as improve the health of individual citizens. Creating shared resources and working together to build relationships is a key step in improving the health of those living in the Cowichan region.

For example, a study out of the US found that group membership and high levels of trust were associated with lower mortality rates (Public Health Agency of Canada, 2013). Lack of such membership, on the other hand, has been linked to various ill effects on health and well-being (Baumeister, 1995).

Key Findings:

- The regional homelessness survey (2014) identified 58 individuals facing absolute homelessness although service providers estimate 100 or more individuals throughout the region.
- The BC Non-Profit Housing Association (2012) estimates that over 2,000 households in the CVRD live in homes that are unaffordable, in poor condition, or overcrowded.
- There are numerous barriers to achieving culturally appropriate housing in the region, both on and off-reserve.
- Vacancy rates for seniors housing has gone down as the number of seniors and demand for seniors housing has risen in recent years.
- There are a disproportionately low number of senior residential care spaces in the CVRD (481 spaces). There is an average of 60 seniors waiting for placement in residential care facilities at any given time.
- The number of children in need of protection is significantly higher in the Cowichan Local Health Area (51.1 per 1,000 children), 7.5 times the provincial average.
- Reported incidents of violence against women in the Cowichan Valley are twice the provincial average.
- In general most communities in the region are very car-dependent, making it difficult for residents to get around if they do not have access to a vehicle.
- The biggest barriers to healthcare and well-being for survey respondents were lack of time, cost, responsibilities, stress, and existing physical or mental health issues.
- Voter turnout is generally low in the CVRD. However, participation in community organizations, clubs, and teams was quite high; over three quarters of survey respondents participated occasionally or frequently.
- There are numerous regional and municipal plans related to economic, environmental, and community health and well-being.

Table 12: Social Environment Indicator Overview

Indicator Name	Description	Relevance to Health and Well-being
<i>Homelessness & Housing</i>		
Homelessness survey	<ul style="list-style-type: none"> The number of individuals identified in the region who face homelessness or are at risk. 	<ul style="list-style-type: none"> Access to affordable and adequate housing (including supportive housing as required) plays a significant role in the health and well-being of individuals and is especially important for those who face greater financial challenges such as youth, seniors, low income households, and people living with or recovering from mental and/or physical health problems (Public Health Agency of Canada, 2013; Mental Health Commission of Canada, n.d.).
Number of homeless shelter spaces and temporary supportive housing	<ul style="list-style-type: none"> The number of homeless shelter spaces and availability of supportive housing for people with mental or physical health issues, including victims of abuse. 	
Precarious housing	<ul style="list-style-type: none"> Current and future estimates of precarious housing (housing that is unaffordable, in poor quality, or overcrowded) in the region. 	
Culturally appropriate housing	<ul style="list-style-type: none"> An overview of issues related to culturally appropriate housing in the region. 	<ul style="list-style-type: none"> Access to housing that is safe, affordable, and culturally appropriate if the foundation for a healthy community (Social Planning Cowichan, 2014a).
Seniors housing	<ul style="list-style-type: none"> Vacancy rates and average monthly rent for market and non-market independent living suites for seniors. 	<ul style="list-style-type: none"> The availability of seniors' housing and residential care spaces determines whether individuals can remain in their community (where they have access to their social support networks) as they age.
Seniors residential care spaces per 65+ population	<ul style="list-style-type: none"> The number of units available for senior care. 	
Waitlist size for seniors residential care spaces	<ul style="list-style-type: none"> The number of elderly community members waiting to access senior residential care. 	

Indicator Name	Description	Relevance to Health and Well-being
<i>Vulnerability</i>		
Children in need of protection	<ul style="list-style-type: none"> The percentage of children in need of protection and the number of children aged 0 to 18 years in care per 1,000 children. 	<ul style="list-style-type: none"> Children with broken families or in care may experience loneliness and therefore a reduction in their sense of belonging. This lack of social relationships is known to contribute to a decrease in health (Holt-Lunstad, 2010).
Domestic abuse	<ul style="list-style-type: none"> An overview of domestic abuse in Canada as well as the CVRD. 	<ul style="list-style-type: none"> Domestic violence can result in physical, sexual, or psychological harm or suffering for victims (Canadian Women’s Foundation, 2014). Exposure to violence (directly or indirectly through witnessing domestic violence) can impact children’s brain development and lead to long-term behavioural and psychological problems. Children who witness violence are also more likely to grow up to become victims or abusers (Ibid).
<i>Accessibility</i>		
Access to services, resources and amenities	<ul style="list-style-type: none"> Identifies resources such as recreation centres, churches, libraries, grocery stores, parks and medical services available in communities. 	<ul style="list-style-type: none"> Access to services and resources within a community can contribute to a person’s sense of belonging (Public Health Agency of Canada, 2013).

Indicator Name	Description	Relevance to Health and Well-being
Access to locally produced food	<ul style="list-style-type: none"> The number of local farms and food producers throughout the region. 	<ul style="list-style-type: none"> Local food production helps to improve food security by increasing access to fresh, nutritious foods (Dieticians of Canada, 2011). It can also help to encourage healthy eating, stimulate the local economy, create opportunities for community bonding and socialization, promote opportunities to maintain connections to the land, and reduce the amount of greenhouse gas (GHG) emissions related to the transportation of food from other regions (Provincial Health Services Authority, 2011).
Barriers to healthcare and well-being	<ul style="list-style-type: none"> Identifies barriers that residents face when seeking resources for health and well-being. 	<ul style="list-style-type: none"> Research shows that access to health services is important to person’s health and well-being (National Collaborating Centre for Aboriginal Health, 2011).
<i>Civic Participation and Planning</i>		
Civic Participation	<ul style="list-style-type: none"> The percentage of eligible voters who voted at the last election; identification of participation rates in community organizations. 	<ul style="list-style-type: none"> Voter turnout and volunteerism have traditionally been used as indicators of community participation (Vancouver Coastal Health, 2009).
Planning and policy	<ul style="list-style-type: none"> The presence of community plans and policy addressing health. 	<ul style="list-style-type: none"> Policies and planning being undertaken for a community that focus on increasing positive social environments can contribute to the health and well-being of the citizens.

Homelessness & Housing

As with housing, homelessness is a complicated issue that requires an examination of the root causes. Homelessness is not an issue that is limited to single community; it is a region-wide social problem that affects all communities within the CVRD. As such, no single community or organization can address this issue alone. It will require the skills and knowledge of many organizations and community members and collaboration at both community and regional levels.

Quality, affordable housing is critical to healthy communities and a healthy region, and it is important to recognize not only those who face absolute homelessness, but also the larger group who face relative homelessness or are at risk due to precarious housing. Homelessness prevention is a critical step in addressing broad social problems in the CVRD.

“Housing first” is an important new approach to homelessness with compelling results across Canada and the US (Mental Health Commission of Canada, n.d.). This approach focuses on providing permanent housing as a first step for those in need as opposed to the traditional models that require people to transition through a series of steps before finding permanent homes. “Housing first” promotes self-sufficiency and focuses on quality of life and social support rather than sobriety or program participation (Canadian Alliance to End Homelessness, n.d.). Once a permanent home is established, individuals have the stability they need to then access the treatments and support

systems they choose to help them with mental or physical health problems.

Homelessness Survey (2014)

In February 2014, Social Planning Cowichan completed a homelessness survey to identify individuals in the region who face homelessness or are at risk. The survey included three categories; an actual count for absolute homelessness, a surveyed count for relative homelessness, and a surveyed count for precarious housing (Social Planning Cowichan, 2014b).

A summary of results is provided in Table 13 although it is important to note that the surveyed numbers may not represent actual numbers of individuals who may fall into these categories. The survey followed the standardized guide for BC (BC Ministry of Labour and Citizens Services); however, it was designed for urban communities and to be completed in winter. Due to the seasonal and migratory homelessness population in the CVRD and the rural nature of certain areas, it was challenging to connect with all individuals so additional comments have been included to estimate the numbers of individuals who may actually fall in these surveyed categories.

Survey patterns also reveal that individuals go in and out of different types of homelessness. These three groups represent the people who are most vulnerable to homelessness in the community but there are many others throughout the region who may be vulnerable as well.

Table 13: CVRD Homelessness Survey Estimates (2014)

Category	Definition	# of People Surveyed	Comments
Absolute homelessness	The condition of those with no physical shelter	58	Local service providers (e.g. Warmland House) estimate 100 or more individuals throughout the region.
Relative homelessness	The condition of those with physical shelter that does not meet basic health and safety standards	76	There are close to 100 individuals receiving income assistance with no fixed address; however, there is a lack of information to accurately estimate the true size of this group.
Precarious housing	The condition of those living in unaffordable, substandard quality, or overcrowded homes	125	It is difficult to accurately estimate the true size of this group. The BC Non-Profit Housing Association (2012) estimates that over 2,000 households in the CVRD live in homes that are unaffordable, in poor condition, or are overcrowded.

Homeless Shelter Spaces and Temporary Supportive Housing

The Canadian Mental Health Association (2012), through its Warmland House in Duncan, provides a number of homeless shelter spaces as well as transitional housing units that allow individuals stay for up to two years to help obtain housing stability and work towards permanent housing. The Warmland

House also provides in-house services including a nurse practitioner, an Adult Mental Health and Addictions counselor, a case worker from Duncan Mental Health, a chiropractor, and even a hair stylist. In addition, the Cowichan Women Against Violence Society (n.d. (a)) provides temporary shelter for women and children experiencing or at risk of abuse or violence.

Table 14: Overview of CVRD homeless shelter spaces and temporary supportive housing (2014)

Community Resources	Number of Units
Warmland House homeless shelter beds and emergency beds	30 shelter beds
	10 additional emergency beds
Caulfield Place transitional housing units (up to 2 years)	24 apartment units
Somenos Transition House temporary shelter (up to 30 days) for victims of abuse	10 beds

Precarious Housing

Precarious housing refers to housing that is unaffordable (more than 30% of a household's total pre-tax income), inadequate (in need of major repairs), and unsuitable (insufficient size and number of bedrooms for the number of residents according to National Occupancy Standards) (Canadian Mortgage and Housing Corporation, n.d.). Social Planning Cowichan estimates that there may be as many as 2,000 people in precarious housing (Social Planning Cowichan. 2014b).

The BC Non-Profit Housing Association (2012) has estimated that 12% of all households in the CVRD live in precarious housing. This includes 2,072 households, or 31% of all renter households, and 1,949 (or 7%) of owner-occupied households in 2011 with an anticipated additional 603 households in need by 2021 (Ibid.).

Culturally Appropriate Housing

Culturally appropriate housing refers to housing that considers the aspects of location, household structures, family sizes, design, and other features that are important to different cultures (Supportive Housing and Diversity Group, 2008). Even if a community has ample supply of housing that is safe and affordable, this does not mean it meets the needs of all of its residents. Location is an important aspect of culturally appropriate housing; housing should be close to one's community and social support systems. The design of homes must also be considered; some cultures place a greater emphasis on extended family and require larger homes to accommodate everyone, while others prefer smaller structures that don't feel institutional or overbearing. Design considerations can also include things like 'communal spaces' for group or religious activities, gender-segregated housing, and orientation and aesthetics.

Social Planning Cowichan examined culturally appropriate housing in the CVRD in their recent Aboriginal Off-Reserve Housing Report (2014a) and identified poverty, a lack of acceptable housing, and a lack of life skills and housing knowledge as key issues for Aboriginal people in the CVRD. Below is a list of key conclusions identified in the report:

- the legacy of the residential school system has impacted First Nations families and traditional ways of living; there has been a loss of cultural knowledge as Elders were unable to pass down guidance;
- there are not enough houses on-reserve so many people are forced to live in overcrowded housing or move off-reserve which can tear apart families and leave individuals without social support networks;
- there is a lack of capacity within First Nations communities and organizations to develop new housing;
- Aboriginal people may face additional barriers to find acceptable housing such as racism or cultural and social expectations;
- the need for Aboriginal housing will increase over the next decade, particularly for youth, Elders, single parents, families, and those suffering from or at risk of homelessness, physical or mental disabilities, and/or abuse; and,
- over 50% of all Aboriginal people are under the age of 25; planning for future housing must consider their needs.

Seniors Housing

Housing options for seniors in the CVRD include the following: standard market housing; independent living suites where the majority of residents are 65 or over, meals are provided on site, and residents receive less than 1.5 hours of healthcare per day; non-market, subsidized independent living suites; and heavy care spaces (i.e., full-time residential care). As other sections of the report focus on standard market housing, this section will focus on housing that is specifically for seniors.

Between 2012 and 2013, vacancy rates for independent living suites in Central Vancouver Island have gone down as the number of seniors and demand for seniors housing has risen (Canadian Mortgage and Housing Corporation, 2013). Average rents for seniors housing rose 1.4% in 2013 with over three quarters of the independent living suites in Central Vancouver Island renting for \$2,400 or more per month (Ibid.). These trends indicate the demand for seniors housing will continue to grow in the region, and affordable housing options for seniors will continue to be an important priority for residents throughout the CVRD.

Seniors Residential Care Spaces per 65+ Population

Island Health administers 481 senior residential care spaces in the CVRD, or 8.9% of the total of 6,497 VIHA spaces on Vancouver Island. The total senior population¹² on Vancouver Island in 2011 was 145,650, of which 10.9% lived in the CVRD.

Of the 481 care spaces within the CVRD, the majority are located in the City of Duncan (317), with the rest located in the Town of Ladysmith (89 spaces) and Chemainus (75 spaces). When the number of senior residential care spaces is assessed against the total senior population of the CVRD, there are 30 beds per 1,000 senior citizens available. This level is significantly lower than the average for Vancouver Island, which had approximately 45 beds per 1,000 senior citizens.

Waitlist for Seniors Residential Care Spaces

Seniors are placed in available beds based upon need, with the goal of avoiding hospitalization, and as such there currently are no official waitlists. According to Island Health's Home and Community Care division, all of the facilities in the district operate at a zero vacancy rate. Newly available beds are typically filled within four days of vacancy.

In the CVRD there is an average of 60 seniors waiting for placement in residential care facilities at any given time—an estimated 50 waiting in-community and an estimated 10 waiting in-hospital (Romphf 2013, pers. comm.). VIHA representatives noted that seniors are spending less time in residential care than they have historically, as people are waiting longer to enter care (based on their health conditions) (Romphf 2013, pers. comm.).

¹² "Senior citizens" refers to the population aged 65 and over.

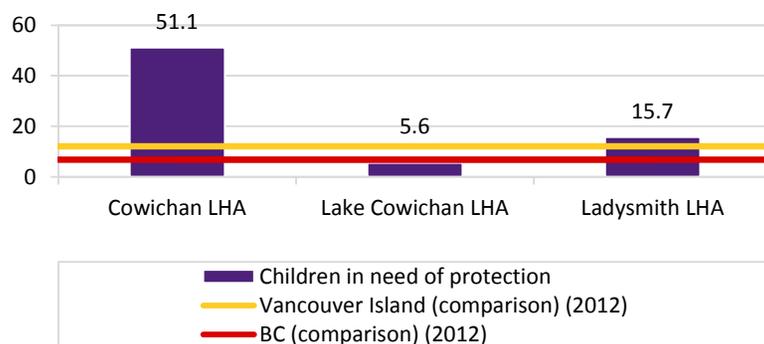
Vulnerability

Vulnerable Children

There are numerous resources within the CVRD to support vulnerable children and parents. The Growing Together Child and Parent Society, located at the Alternate Education School in Duncan, offers important support and child care for teen parents who are balancing the challenges of parenting while completing their basic education (BC Council for Families, 2011). Other facilities (noted by workshop participants) such as the Children’s Play and Discovery Centre, and organizations, such as Cowichan Women Against Violence Society, Success by 6, Island Health, the Ministry for Children and Family Development, Hiiye-yu Lelum – House of Friendship, Chemainus Community School Association, and many others, support children and parents throughout the CVRD with a variety of services.

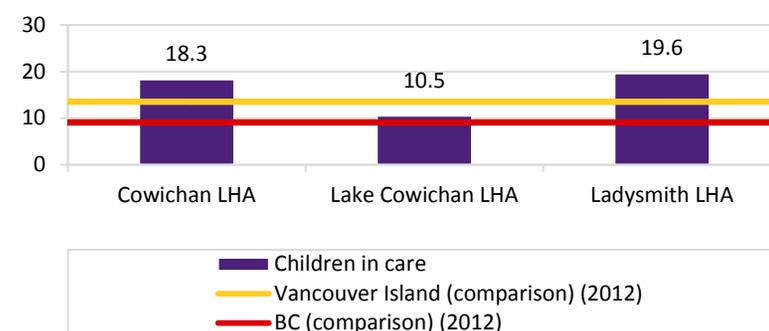
The proportion of children (aged 0 to 18 years) in need of protection is significantly higher in the Cowichan Local Health Area (LHA) (51.1 per 1,000 children), 7.5 times higher than the provincial average (6.8 per 1,000 children) and over 4 times higher than the average for Vancouver Island (12.1 per 1,000 children). The Ladysmith LHA also had a high proportion of children in need of protection with a proportion over twice as high as the provincial average. The Lake Cowichan LHA, however, had a lower rate than both the province and Vancouver Island as a whole, with only 5.6 children per 1,000 in need of protection. The proportions of children in care were also higher for the CVRD than the province. The Cowichan and Ladysmith LHAs had over twice as many children in care than the province while the Lake Cowichan LHA was just over the provincial average (9.1 per 1,000 children).

Figure 48: Children in Need of Protection per 1,000 Children (0 to 18 years) (2012)



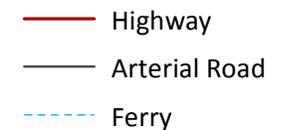
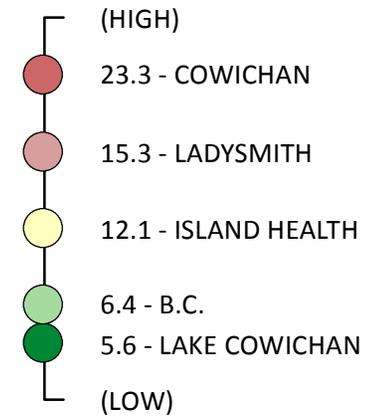
Source: Vancouver Island Health Authority, 2012.

Figure 49: Children in Care per 1,000 Children (0 to 18 years) (2012)



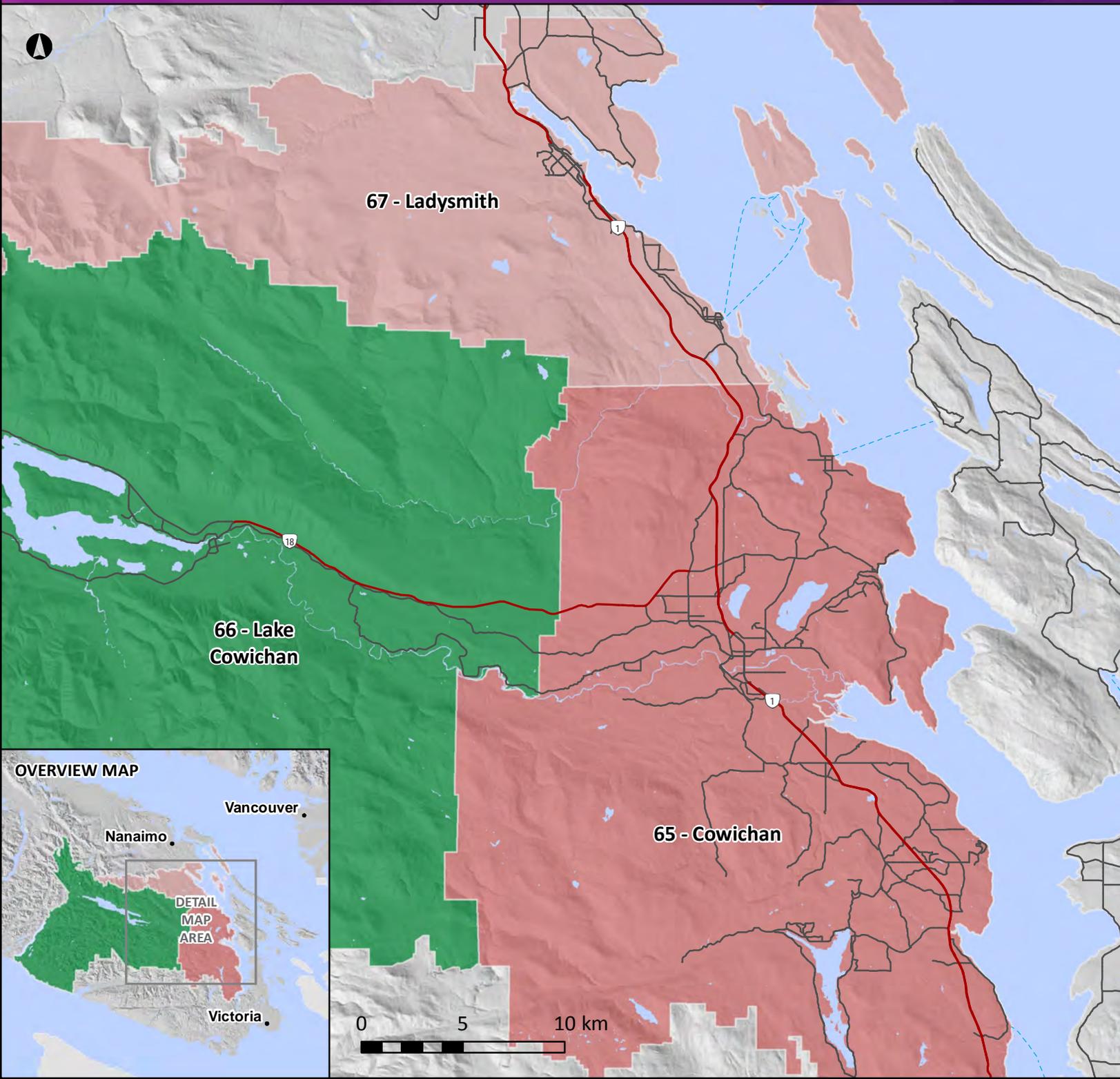
CHILDREN IN NEED OF PROTECTION

TOTAL PER 1,000 POPULATION 0-18 IN DECEMBER 2011 BY LOCAL HEALTH AREA



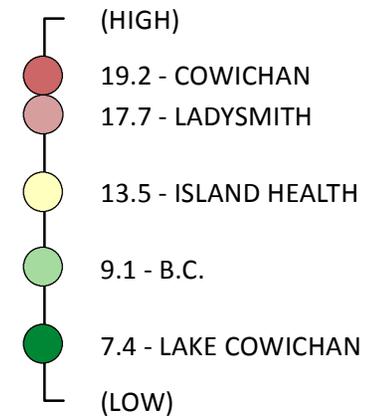
Statistical data from BC Statistics Agency and Ministry of Children and Family Development (Dec 2011). Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.

Projection: UTM Zone 10 Datum: NAD 83
Date: May 1, 2014



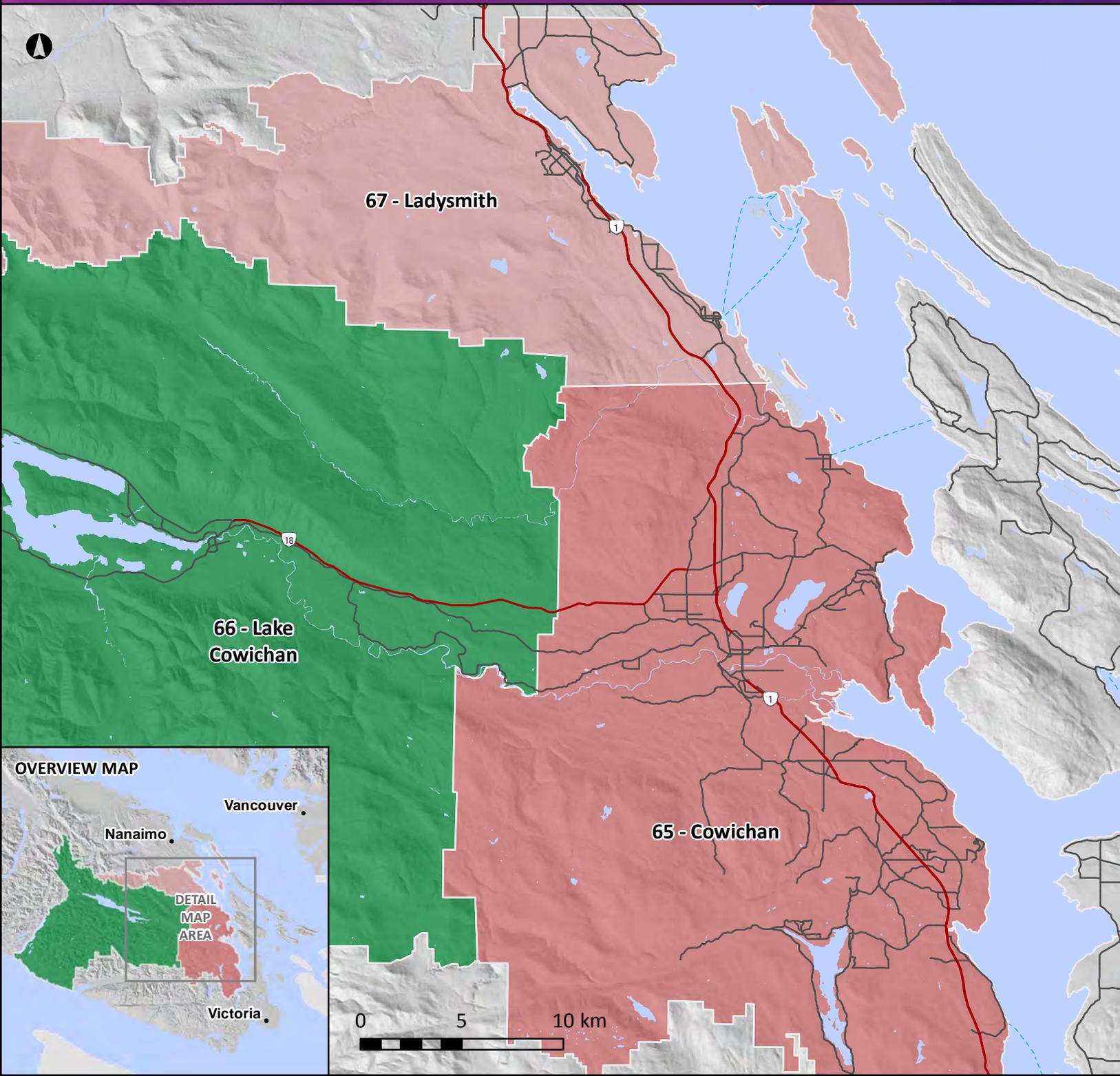
CHILDREN IN CARE

**TOTAL PER 1,000
POPULATION 0-18 IN
DECEMBER 2011 BY
LOCAL HEALTH AREA**



Statistical data from BC Statistics Agency and Ministry of Children and Family Development (Dec 2011). Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.

Projection: UTM Zone 10 Datum: NAD 83
Date: May 1, 2014



OVERVIEW MAP



Domestic Violence and Violence Against Women

Domestic violence is a serious issue across Canada as well as the CVRD. The Canadian Women's Foundation (2014) reports that while men can also be victims of domestic abuse, over 83% of all police-reported domestic assaults in Canada are against women:

- Aboriginal women in Canada are 3.5 times more likely to be victims of violence than non-Aboriginal women and are 8 times more likely to be killed by their intimate partners (Ibid).
- Immigrant women, women with disabilities, and younger women are also more likely to experience domestic violence in Canada; violent crime rates are nearly double for women aged 15 to 24 compared to women aged 35 to 44 (Ibid).
- There is evidence to suggest that women who are abused will stay with their abuser because they believe that if they leave, it will lead to a life of poverty for her children (Canadian Women's Foundation, n.d.).

Domestic violence also impacts children; even if children aren't direct victims of abuse, those who witness violence at home are more likely to grow up to become victims or abusers and have twice as many psychiatric disorders as children from non-violent

homes (Ibid). Eighty percent of local child protection cases list domestic violence as one of the risk factors.

Violence against women particularly intimate partner violence and sexual violence against women - are major public health problems and violations of women's human rights (World Health Organization, 2013). The Cowichan Women Against Violence Society (n.d. (b)) states that in the Cowichan Valley, reported incidents of violence against women are twice the provincial average. In 2009, Duncan established a designated Domestic Violence Court and the North Cowichan RCMP established a Domestic Violence Unit (Cowichan Women Against Violence Society, n.d. (b)).

However, it is important to note that only 22% of domestic violence incidents and 10% of sexual assaults are reported to police, so the actual statistics are likely much higher (Canadian Women's Foundation, 2014). Over 1,000 women access the Cowichan Women Against Violence Society's services every year (Cowichan Women Against Violence Society, n.d. (b)). This is a significant issue for the region, and one that impacts the health and well-being of many individuals and families throughout the CVRD.

Accessibility

Access to Services, Resources, and Amenities

Access to community services and amenities such as groceries, entertainment, parks, libraries, schools, recreation centres, churches, playgrounds, and medical and social support services vary from community to community in the CVRD. To improve awareness of existing community amenities and services, Our Cowichan Community Health Network has developed an interactive community asset map available through their [website](#) which will be updated on an ongoing basis. Assets are organized by education, family, aboriginal, health care, social support and recreation categories.

Cowichan Tribes have also undertaken asset mapping for First Nations communities, the Hul'qumi'num Health Hub Asset Mapping project. Further information may be obtained from the Cowichan Tribes Band office. Survey respondents were asked to identify which of these amenities they could access in their community within a 20 minute walk (approximately one and a half kilometers) to provide an overview of the relative accessibility of each community. Based on survey responses, city of Duncan, Town of Ladysmith, and Town of Lake Cowichan are

the most accessible for residents without a car. The municipality of North Cowichan, First Nations communities, Northern Electoral Areas, Southern Electoral Areas, and the Western Electoral Areas are the least accessible. This finding is consistent with general population densities—the higher density areas having the greatest accessibility, while lower density areas have the least.

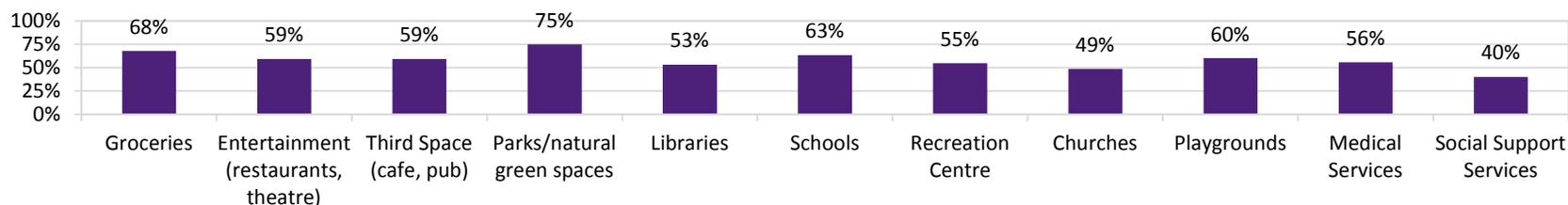
The majority of survey respondents from all communities (69 to 85%) were able to walk to parks or natural green spaces; however, other amenities such as medical and social support services, libraries, schools, entertainment (restaurants, theatres, etc.), recreation centres, and churches were less accessible for many communities (based on 538 responses). In general, most communities in the region are quite car-dependent, making it difficult for residents to get around if they do not have access to a vehicle. This is particularly problematic for residents with mobility issues such as youth, seniors, and people with lower incomes and can contribute to social isolation and many other issues associated with automobile-oriented communities.

Figure 50: Our Cowichan Community Asset Map

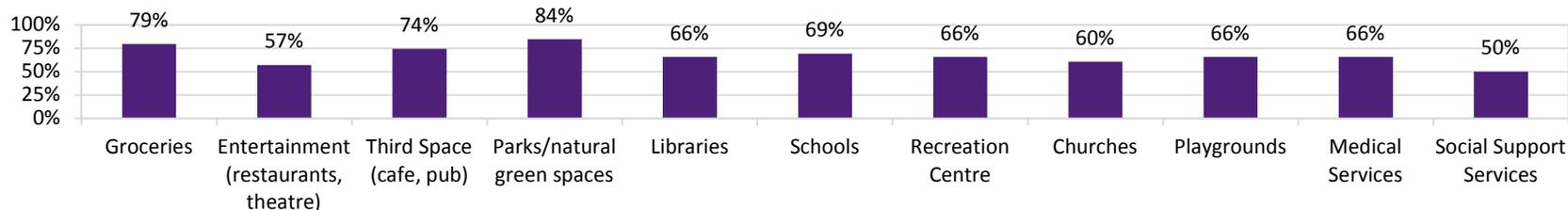


Figure 51: Community Amenities and Services Identified by Survey Respondents to be Within 20 Minutes Walking Distance (2014)

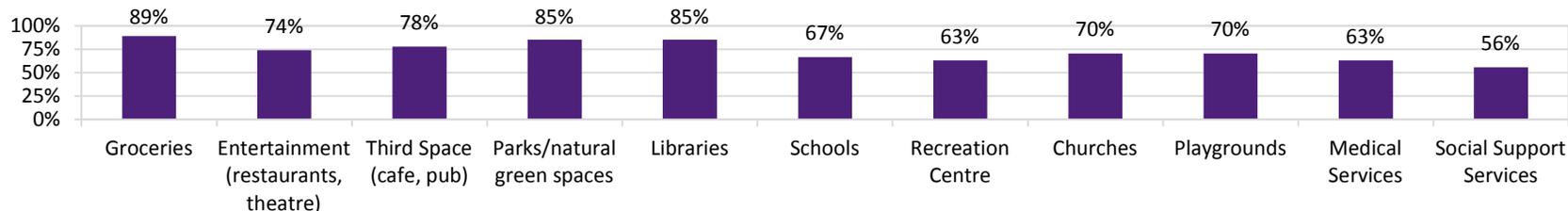
City of Duncan



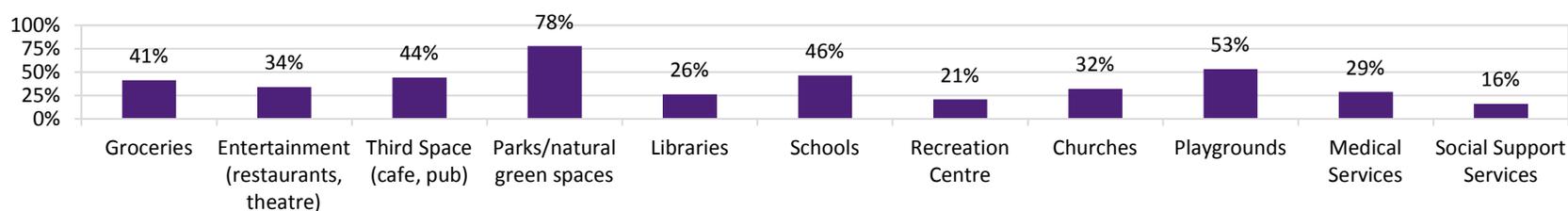
Town of Ladysmith



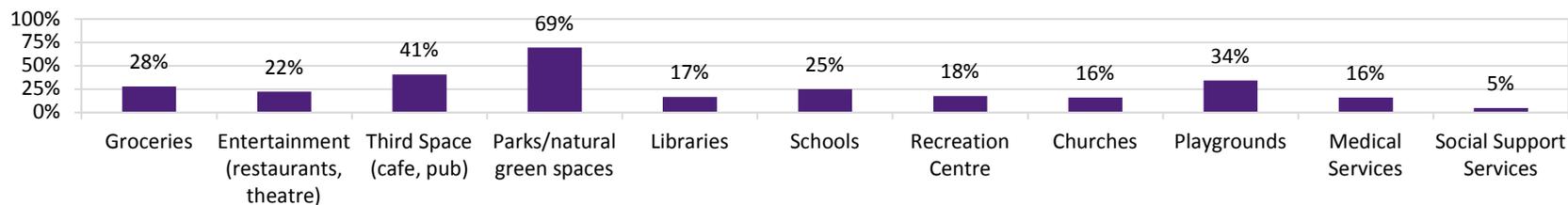
Town of Lake Cowichan



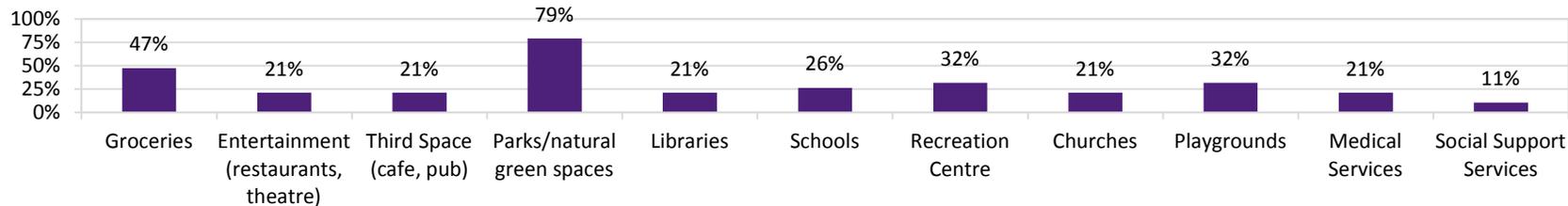
District Municipality of North Cowichan



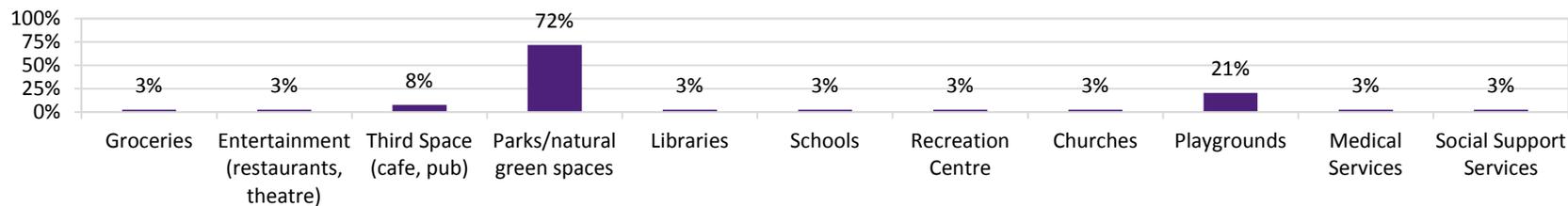
Southern Electoral Areas



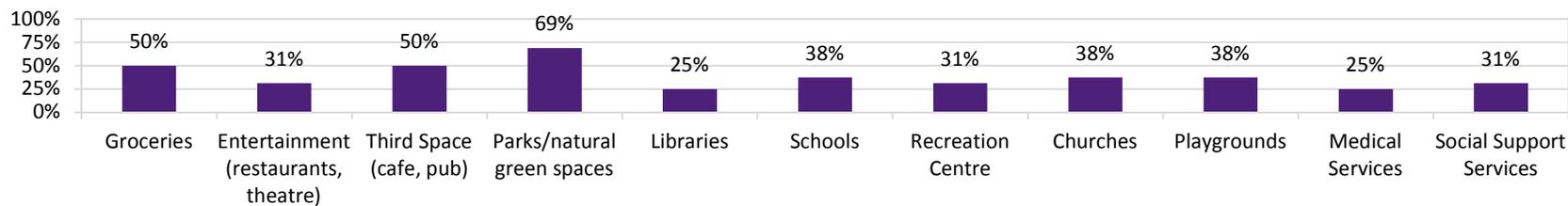
Northern Electoral Areas



Western Electoral Areas



First Nations communities



Source: Cowichan Community Health Survey, 2014.

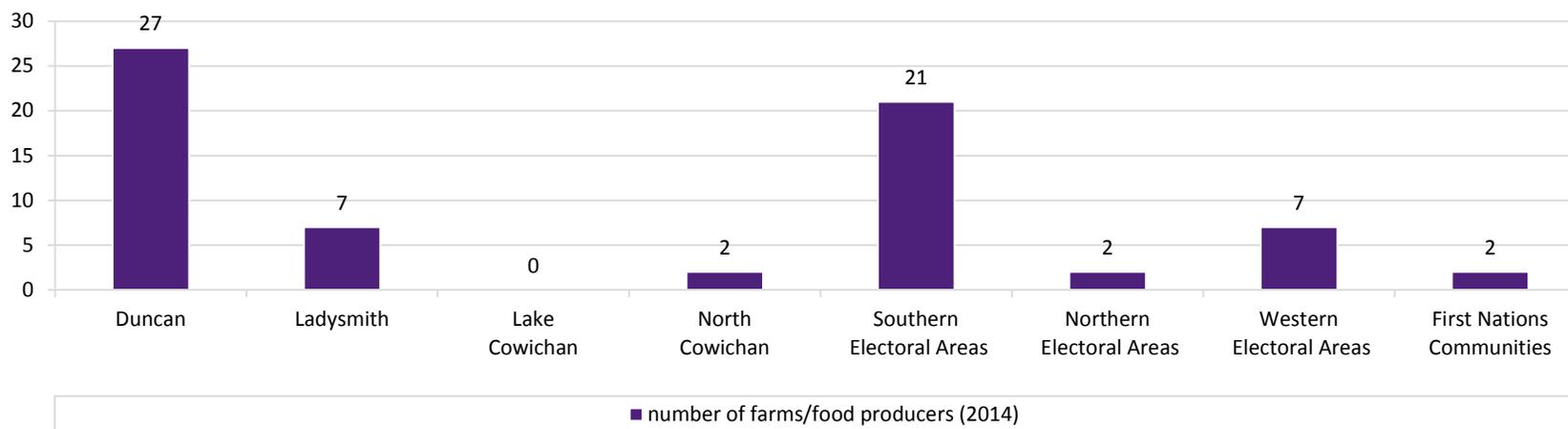
Note: See Data Sources section (page 8) for details on survey respondents.

Access to Locally Produced Food

According to the Cowichan Green Community (n.d.), the CVRD has approximately 68 local farms and/or food producers. While this does not include local food sources such as community gardens, backyard gardens, edible landscaping, or naturally growing edible plant sources, it does provide an overview of larger-scale food production within the region. An interactive map of these farms and food producers is available through the Cowichan Green Community website at <http://www.cowichangreencommunity.org/foodmap>. It is challenging to compare the CVRD to other regions in terms of local food production due to varying landscapes, climates, and populations. However, numerous residents at the community

workshops identified local food and agriculture as a key strength for the region, suggesting that access to local food is available in most communities. As shown in Figure 52, the majority of local farms are located in Duncan and the Southern Electoral Areas. The four local farmers’ markets in Ladysmith, Chemainus, South Cowichan and Duncan increase access for people unable to purchase food directly from local farms (BC Association of Farmers’ Markets, 2013). In addition, the Farmers’ Market Nutrition and Coupon Program at the Duncan Farmers’ Market helps to support low income families and seniors gain free access to local food as well as nutritional information and recipes (Cowichan Green Community, n.d.).

Figure 52: Local farms and food producers (2014)



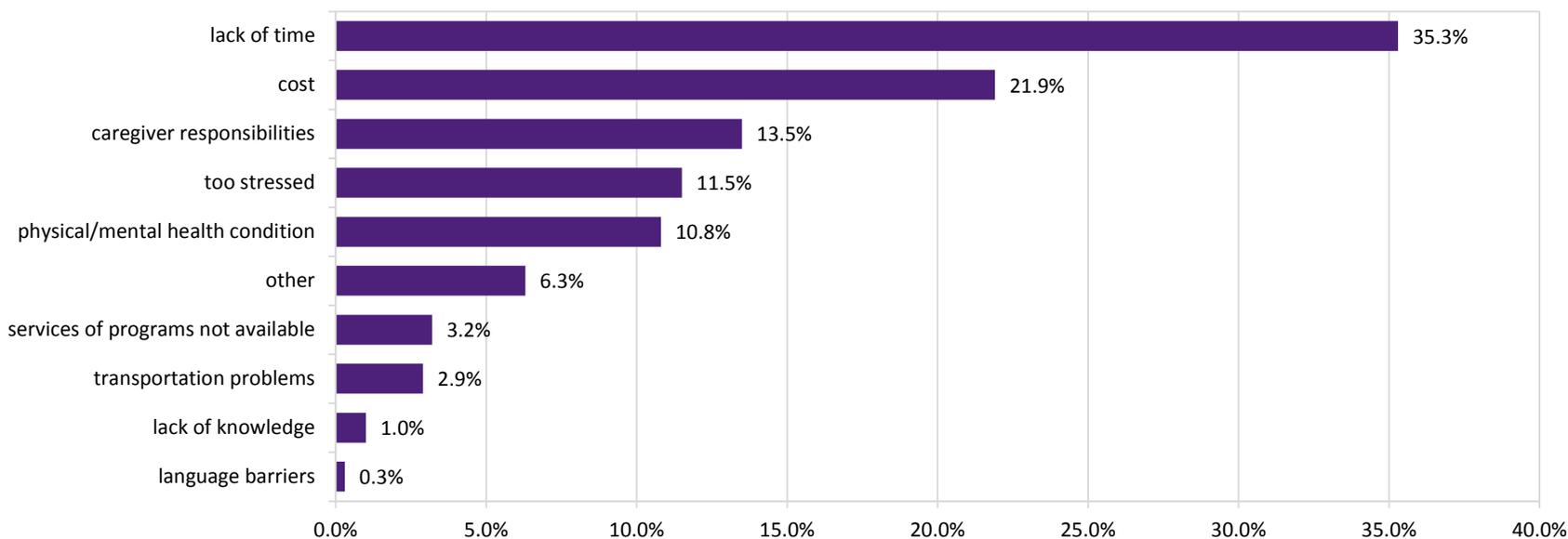
Source: Cowichan Green Community, n.d.

Barriers to Healthcare & Well-being

The Cowichan Community Health Survey asked what, if anything, was keeping respondents from taking steps to improve their health and or well-being (620 survey responses). The biggest factors were lack of time, cost, responsibilities, stress, and existing physical or mental health problems. Other barriers that respondents noted included scheduling (timing of activities/recreation classes didn't work for people, particularly those doing shift work), availability of child care, a lack of social support, and exhaustion (individuals were too tired after working

and taking care of others). Respondents also noted the following services were not available, in the region or their local community: rehab and detox programs, support for disabled workers, support for adults with mental health challenges, child care for shift workers, residential care to support caregivers, health services for chronic disease, surgical services and specialized healthcare (dialysis unit), affordable recreation classes (yoga, tai chi, etc.) and recreation amenities (such as a pool).

Figure 53: Barriers to Healthcare and Well-being (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Civic Participation & Planning

Voter Turnout

Voter turnout in the CVRD is low for local municipal and electoral area elections. Roughly one third of eligible voters vote in local elections; in some communities such as Cowichan Bay Area D the number of eligible voters who voted has been as low as 17%, while other communities such as Youbou/Meade Creek Area I

have reached as high as 53% in some election years. Acclamation, where a candidate is automatically elected or returned to power when no other candidates run, is quite common in the CVRD.

Table 15: Summary of Voter Turnout for General Local Elections (1996 to 2011)

Area	% of eligible voters					
	1996	1999	2002	2005	2008	2011
City of Duncan	n/a	n/a	n/a	n/a	n/a	33%
Town of Ladysmith	n/a	n/a	n/a	n/a	n/a	29%
Town of Lake Cowichan	n/a	n/a	n/a	n/a	n/a	acclamation
District Municipality of North Cowichan	n/a	n/a	n/a	n/a	n/a	32%
Southern Electoral Areas:						
Mill Bay/ Malahat Area A	35%	42%	31%	25%	23%	31%
Shawnigan Lake Area B	22%	25%	28%	29%	acclamation	31%
Cobble Hill Area C	32%	24%	acclamation	33%	acclamation	37%
Cowichan Bay Area D	17%	43%	39%	acclamation	acclamation	28%
Western Electoral Areas:						
Sahtlam/ Glenora/ Cowichan Station Area E	21%	25%	36%	acclamation	acclamation	acclamation
Cowichan Lake South / Skutz Falls Area F	32%	38%	acclamation	acclamation	35%	acclamation
Northern Electoral Areas:						
Saltair / Gulf Islands Area G	acclamation	18%	acclamation	26%	35%	acclamation
North Oyster/ Diamond Area H	47%	acclamation	acclamation	acclamation	32%	acclamation
Youbou / Meade Creek Area I	43%	acclamation	53%	acclamation	41%	40%

Source: CVRD, 2011; CivicInfoBC, 2011.

Provincial elections, on the other hand, have historically received greater participation. Between 1996 and 2013, the CVRD had a higher voter turnout than the province as a whole. In 1996 and

2001 the province had significantly higher voter turnout which has declined over time. Voter turnout in the CVRD has also declined over time although less dramatically than the province as a whole.

Table 16: Summary of Voter Turnout for Provincial General Elections (1996 to 2013)

Region	% of eligible voters				
	1996	2001	2005	2009	2013
Cowichan Valley*	74%	77%	72%	63%	62%
BC	71.5%	71%	58%	51%	55%

Source: Elections BC, 2013; Elections BC, 2009; Elections BC, 2005; Elections BC, 2001; Elections BC, 1996.

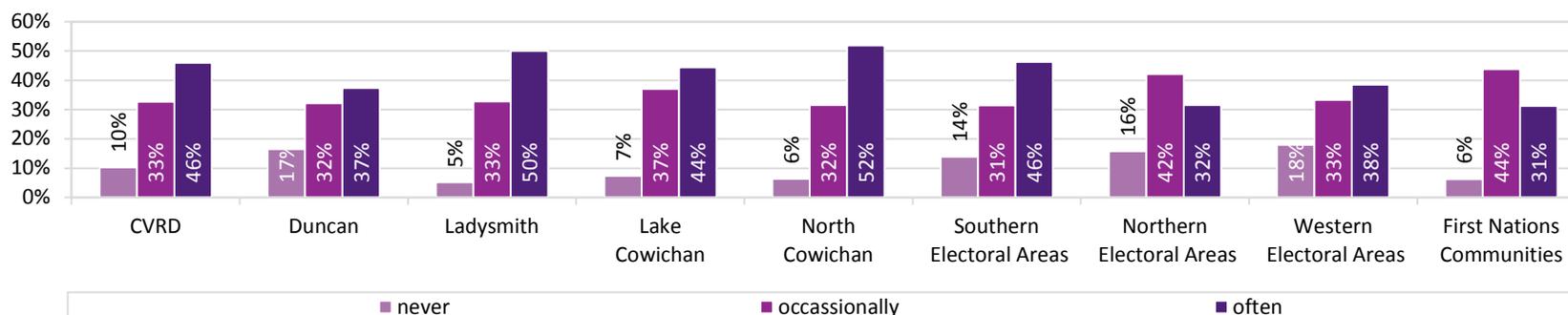
**Note: In 2005 and earlier, the Cowichan Valley Voting Area was referred to as the Cowichan-Ladysmith Voting Area*

Participation in Community Organizations, Teams, and Groups

Over three quarters of survey respondents (648 survey responses) participate in community organizations or teams (including volunteering, attending church, playing on sports teams, participating in service groups, etc.). Close to half of respondents (46%) participate often; several times a month or more. One third of respondents participate occasionally; once a month or less. Community participation was relatively high in all

CVRD communities, particularly in Ladysmith, Lake Cowichan, and North Cowichan. Given the disproportionate number of respondents who are female and over 50, this determinant could benefit from a statistically valid representative survey.

Figure 54: Participation in Community Organizations (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Presence of Community Plans and Policy Addressing Health

There are numerous regional and municipal plans, strategies and studies that address health and well-being in the CVRD. While this list is not exhaustive, it provides an overview of the efforts of local and regional governments to address the health of CVRD residents.

Regional plans, strategies and studies (CVRD, n.d.) provide guidance for region-wide sustainability and policy to support economic, environmental, and community social health and well-being.

Environmental:

- Cowichan Adaptation Strategies (2013): a plan to develop climate change adaptation strategies for agriculture
- Cowichan Watershed Assessment (2012)
- Cowichan Zero Waste Challenge: a website to inform and educate about zero waste (<http://www.zerowastecowichan.ca/>)

- Clean the Air Cowichan: a website to inform and educate about air quality and smoke pollution (<http://cvr.bc.ca/index.aspx?NID=1469>)
- Cowichan Valley Regional District State of the Environment (2010) (<http://www.12things.ca/12things/uploads/FinalSoEReport.pdf>)
- Waterfowl Stewardship Action Plan (2010)
- South Cowichan Watershed Management Plan (2009)
- Lower Cowichan-Koksilah Integrated Flood Management Plan (2009)
- Tri-Regional District Solid Waste Study (2011)
- Cowichan Basin Water Management Plan (2007)
- Solid Waste Management Plan (2006)
- Central Sector Liquid Waste Management Plan (1999)
- South Sector Liquid Waste Management Plan (1998)

- Regional Energy Reports: a variety of reports examining potential renewable energy resources, energy consumption, potential distributed energy opportunities, energy resilience, energy density projections, and energy mapping and modelling in the region
- Cowichan Watershed Atlas: an interactive online map of watersheds in the region (http://cmnbc.ca/atlas_gallery/cowichan-valley-watershed-atlas)

Economic:

- Sustainable Economic Development Strategy for the Cowichan Region (2011)

Community Social Health and Well-being:

- Cowichan Region Area Agricultural Plan (2010)
- Regional Affordable Housing Needs Assessment (in progress)
- Active Transportation Plan (in progress): a collaborative plan involving the City of Duncan, Cowichan Tribes, and North Cowichan
- Cowichan Region Safety Lens Framework (2008)
- Regional Parks and Trails Master Plan (2007)
- 12 Big Ideas for a Strong Resilient Community: a website to inform and educate about sustainability in the region (<http://www.12things.ca/12things/index.php>)

Municipal plans, strategies and studies (CVRD, n.d.): provide guidance for sustainable growth and development in each community including land use planning, environmental and agricultural protection, housing, economic, and social health and well-being. .

Official Community Plans:

- City of Duncan Official Community Plan Bylaw No. 2030
- Town of Ladysmith Official Community Plan Bylaw No. 1488
- Town of Lake Cowichan Official Community Plan Bylaw No. 910-2011
- District Municipality of North Cowichan Official Community Plan Bylaw No. 3450
- South Cowichan Official Community Plan Bylaw No. 3510 (Electoral Areas A, B, and C)
- Electoral Area D – Cowichan Bay Official Community Plan Bylaw No. 3605
- Electoral Area E – Cowichan Station/Sahtlam/Glenora Official Community Plan Bylaw No. 1490
- Electoral Area F – Cowichan Lake South/Skutz Falls Official Community Plan Bylaw No. 1945
- Electoral Area G – Saltair/Gulf Islands Official Community Plan Bylaw No. 2500
- Electoral Area H – North Oyster/Diamond Official Community Plan Bylaw No. 1497
- Electoral Area I – Youbou/Meade Creek Official Community Plan Bylaw No. 2650

Other Community Sustainability Plans:

- City of Duncan Integrated Community Sustainability Plan (draft 2013)
- Town of Ladysmith Sustainability Action Plan (2013)

CVRD communities also have numerous initiatives related to social, environmental and economic well-being that can be found on their local websites:

- City of Duncan: www.duncan.ca
- Town of Ladysmith: www.ladysmith.ca
- Town of Lake Cowichan: www.town.lakecowichan.bc.ca
- District Municipality of Lake Cowichan:
www.northcowichan.bc.ca
- Electoral Areas: www.cvrld.bc.ca
- First Nations communities: www.cowichantribes.com



Key Determinant 6: Physical Environments

The physical environment is known to be an important determinant of health.

Exposure to contaminants in air, water, food and soil can cause numerous negative health effects (Public Health Agency of Canada, 2013).

In addition to the health issues related to environmental contamination, there are also factors related to the built environment to consider. These include the direct physical impacts of indoor air quality, poor heating or ventilation in buildings and hazards from road infrastructure. The built environment also has indirect impacts on individual's health and well-being, through the quality of available housing and community safety and accessibility (including transportation and mobility) (Royal Society for Public Health, 2012).

Key Findings:

- Survey respondents reported air quality, groundwater quality, soil quality, and noise and light pollution as the top environmental issues in their communities. Other key issues identified were logging and loss of habitat, possible degraded surface water quality (including lakes, rivers, and harbours), waste management, and traffic.
- Despite recent bylaws to improve air quality, smoke pollution from backyard burning, wood stoves, vehicle exhaust, and second hand smoke is still an issue in communities throughout the region.
- The CVRD is gradually upgrading and replacing its water systems to ensure high quality drinking water. However, water quality is an issue for certain areas and protecting the region's long-term supply of potable water is an increasing concern.
- The majority of daily commuters in the CVRD (85%) drive vehicles to work. Transit access varies greatly by community and numerous survey comments suggested that the frequency of service and limited local routes made transit inconvenient.
- Close to half of survey respondents (47%) reported there were no safe and accessible pedestrian routes in their community and over half of respondents (59%) reported there were no safe and accessible bike lanes/routes.
- The majority of survey respondents (71%) felt 'very' or 'extremely' safe in their community. Respondents noted that better lighting, sidewalks/bike lanes, speed bumps and traffic control, and increased police presence/neighbourhood watches could improve community safety.
- Property crime and violent rates in the CVRD have declined between 2005 and 2011 and are similar to the provincial average. Duncan has the highest number of property and violent crimes per 1,000 people.
- Settlement patterns in the region are primarily low density with a limited number of areas with sufficiently high densities and land use mixes to support and encourage active forms of transportation such as walking and cycling. Senior citizens at home in low density areas are also at risk of social isolation.
- Just over half of all housing in the CVRD was constructed after 1981. The proportion of housing in need of major repair is significantly higher in First Nations communities.

Beyond the more local and direct impacts of the physical environment, there is growing concern that we are changing the local, regional and ultimately global ecosystems in ways that damage the basic life support systems of the planet. Indicators of local ecological sustainability also need to be included in the assessment of health status, reflecting local greenhouse gas emissions, evidence of climate change, depletion of key renewable and non-renewable resources—such as farmland, forests, fisheries-- emissions of solid, liquid and toxic wastes, and loss of habitat, species and biodiversity.

Table 17: Physical Environment Indicator Overview

Indicator Name	Description	Relevance to Health and Well-being
<i>Human & Environmental Health</i>		
Environmental Health	<ul style="list-style-type: none"> A summary of comments regarding environmental and human health issues from survey respondents. 	<ul style="list-style-type: none"> It is well documented that air pollution from both indoor and outdoor sources can contribute to a variety of illnesses and premature deaths in Canadians; improving air quality would result in a large health benefit to citizens (CMA, 2008). Clean air, water, and soil are essential to the health of citizens and ecosystems of the Cowichan region.
Air Quality	<ul style="list-style-type: none"> Percentage of survey respondents who reported being exposed to indoor and outdoor second hand smoke. Information on CVRD policies and initiatives related to air quality. 	
Water Quality	<ul style="list-style-type: none"> Percentage of survey respondents who reported safe drinking water in their community as well as the number of boil water advisories. 	
<i>Transportation & Mobility</i>		
Transportation Mode Split	<ul style="list-style-type: none"> Identifies the most common mode of transportation for individuals who regularly commute (i.e., single occupancy vehicle, carpool, bike, walk, transit). 	<ul style="list-style-type: none"> Transportation systems are known to be a significant determinant of health both directly as they relate to levels of pollution and accidents, as well as indirectly as they relate to and impact the layout of urban areas (Royal Society for Public Health, 2012).
Accessible and Convenient Transit Service	<ul style="list-style-type: none"> The percentage of survey respondents who reported local transit services/routes get them where they need to go within a reasonable time frame and the percentage of respondents who live within a 10 minute walk of a transit stop. 	
Transportation Safety and Mobility	<ul style="list-style-type: none"> The percentage of survey respondents who reported safe and accessible bike and pedestrian routes in their communities. 	

Indicator Name	Description	Relevance to Health and Well-being
<i>Community Safety</i>		
Perception of Safety	<ul style="list-style-type: none"> Percentage of survey respondents who reported feeling safe in their neighbourhood. 	<ul style="list-style-type: none"> A safe community allows individuals to move around more freely and access resources that are essential to good health.
Property Crime Rates	<ul style="list-style-type: none"> Identifies the number of property crime incidences per 1,000 people. 	
Violent Crime Rates	<ul style="list-style-type: none"> Identifies the number of violent crime incidences per 1,000 people and serious juvenile crime rates per 1,000 people (aged 12 to 17). 	
<i>Built Environment</i>		
Density	<ul style="list-style-type: none"> Population density values presented graphically by census subdivision. 	<ul style="list-style-type: none"> The denser a neighbourhood or community is, the easier it is for residents to reach their destinations using active means of transportation, such as walking, cycling and public transit, thereby encouraging more physical activity than in car-dependent neighbourhoods and communities.
Housing Quality and Age	<ul style="list-style-type: none"> General age of housing stock in the region and percentage of dwellings in need of major repair. 	<ul style="list-style-type: none"> Homes in need of major repair may be unsafe to inhabit and may have issues such as poor air quality that contribute to poor health.

Human & Environmental Health

Environmental Health

The Cowichan Community Health Survey asked respondents about any environmental issues that impacted their community (316 responses). The following list provides a summary of the comments received with the total number of comments provided in brackets next to each topic. As some comments included more than one topic, the totals below will exceed the total number of respondents for this question.

- **Air quality:** backyard burning, chimney smoke, vehicle exhaust, air pollution from industry, dust, etc. (90 comments)
- **Groundwater and soil quality:** manure run-off, pollution and leakage from contaminated waste storage, use of pesticides, fertilizers, erosion and run-off from land cleared for development, insufficient protection for watersheds and aquifers, drainage issues, malfunctioning and unregulated septic systems, too many people on septic, contaminants from previous copper mine, etc. (70 comments)
- **Noise and light pollution:** noise from neighbours, dogs, logging trucks, industry, airport, highway traffic, and ATVs; light pollution from surrounding buildings (44 comments)
- **Industry issues:** smell, air, soil, and water pollution from pulp mill, agricultural operations, community composting facilities, and crematoriums, concerns about future impact from pipeline projects (42 comments)
- **Logging, development, loss of habitat:** general environmental health, clear-cutting for development, loss of habitat and fragmentation of forests, habitat, loss of mature trees, loss of scenic values, invasive species (e.g., scotch broom) taking over natural habitat, hunting, etc. (35 comments)
- **Surface water quality:** sewage in harbour, shellfish unsafe for consumption, loss of salmon, contaminated beaches, quality of Quamichan Lake, Somenos Lake, Cowichan River, boats on Cowichan Lake, stream and river health and flows, storm drains emptying directly into creeks (18 comments)
- **Waste management:** garbage on roads, insufficient waste management (16 comments)
- **Traffic:** heavy and fast moving traffic, dangerous for pedestrians, traffic increasing in various communities with more development (13 comments)
- **Social issues:** development of housing without appropriate amenities and services (e.g., health care), loss of scenic values, lack of sidewalks, lighting in neighbourhoods, empty storefronts, run down houses, unregulated land uses on residential properties, lack of trails (6 comments)
- **Electromagnetic radiation:** from smart meters, cell phone towers, and various electronics (4 comments)
- **Climate change:** sea level rise, extreme weather, ocean acidification, etc. (3 comments)
- **No environmental and human health issues** (62 comments)
- **Did not specify:** respondents noted there were environmental issues in their community but did not elaborate (14 comments)
- **Marijuana grow operations:** safety concerns, smell, etc. (3 comments)

Air Quality

Outdoor air quality is impacted by a variety of sources including emissions from industry, forest fires, cars and the burning of wood and other products. In 2010, a new monitoring station was installed by the BC Ministry of Environment in Duncan. The station provides information about the quality of air in the Cowichan Valley including continuous monitoring of levels of particulate matter, ground-level ozone and priority substances such as NO₂ and SO₂ (BCMoe, 2010). In addition, the Air Quality Health Index or AQHI, is available for the Duncan area at www.airhealth.ca. The AQHI is a scale that was designed to help people understand what the air quality data collected means and calculated using current concentrations of fine particulate matter, nitrogen dioxide and ozone (BC Air Quality, 2014). Information on individual pollutants as well as the AQHI for the Duncan station is available in real time so that residents can make decisions about how they can best protect themselves from outdoor air pollutants.

In an effort to reduce smoke pollution, the Cowichan Valley Regional District recently enacted a bylaw which bans the open burning of garbage or yard waste. The bylaw is intended to

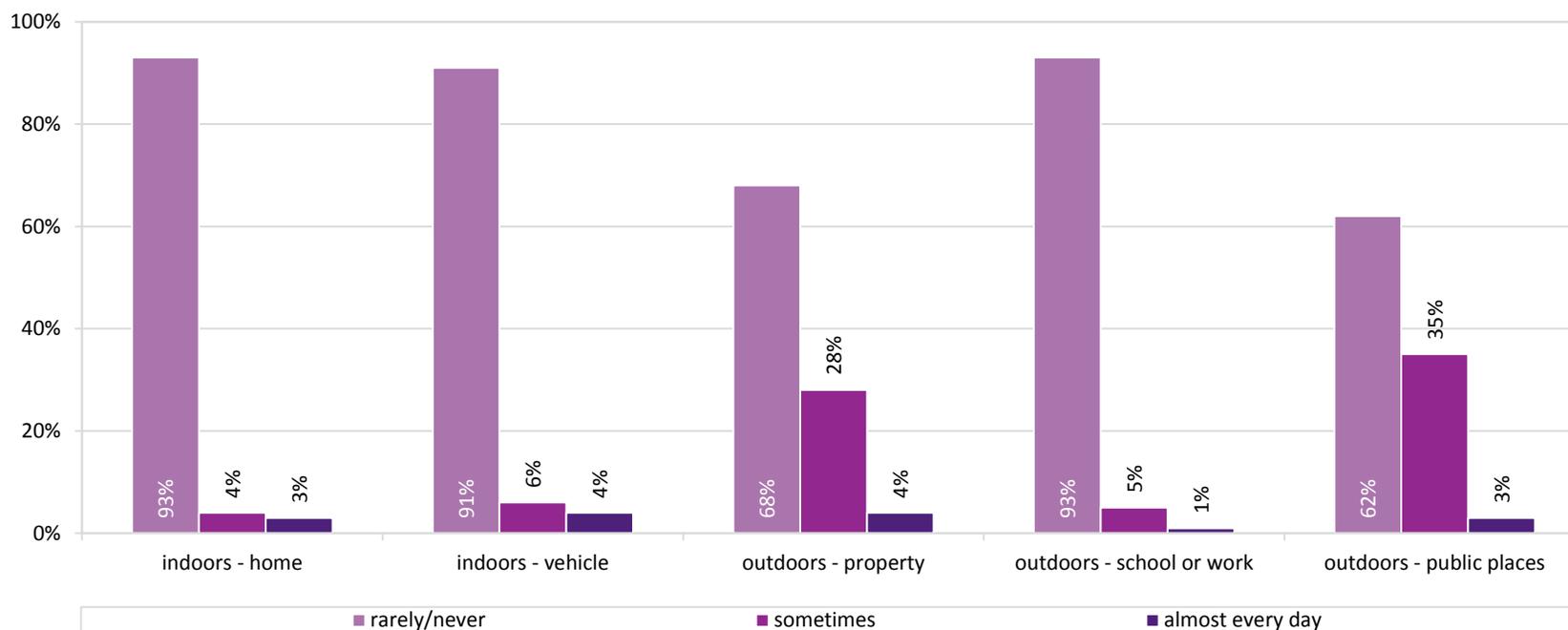
improve air quality in the region and address any health impacts that are likely linked to smoke pollution. Additional bylaws contributing to better outdoor air quality have been adopted by some cities and towns in the Cowichan region including bylaws related to smoking in public places, idling vehicles and the installation of wood burning appliances. Additional information on regional and municipal plans is provided under Key Determinant 5: Social Environments (presence of Presence of Community Plans and Policy Addressing Health, page 107).

Understanding indoor air quality is equally important to outdoor air as people spend significant time in offices, schools and homes. Important indoor air pollutants include mold, carbon monoxide, radon, synthetic organic compounds in paints, furniture, fabrics and office furniture, and asbestos. The Cowichan Green Community (CGC, 2014) has created a resource online which provides information on challenges to indoor air quality and basic tips for improving it. This includes the control of moisture in the home, exercising care when using combustion appliances and understanding the potential for asbestos to be present in older homes.

The Cowichan Community Health Survey asked respondents how often they were exposed to second hand smoke in various indoor and outdoor locations. Between 602 and 608 respondents answered each question. The majority of respondents (91 to 93%) were rarely or never exposed to second hand smoke in their homes, vehicles or schools and workplaces. However, outdoor second hand smoke was an issue in public places and on people’s properties (i.e., backyard burning),

particularly in the Electoral Areas. Ladysmith, Lake Cowichan, and First Nations communities also experienced higher rates of second hand smoke in public places although the number of survey respondents was limited from these communities so this data may not be representative. With respect to exposure to outdoor second hand smoke, 32% of respondents were exposed occasionally or frequently on their property and 38% were exposed occasionally or frequently in public places.

Figure 55: Percentage of survey respondents who reported second hand smoke exposure (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

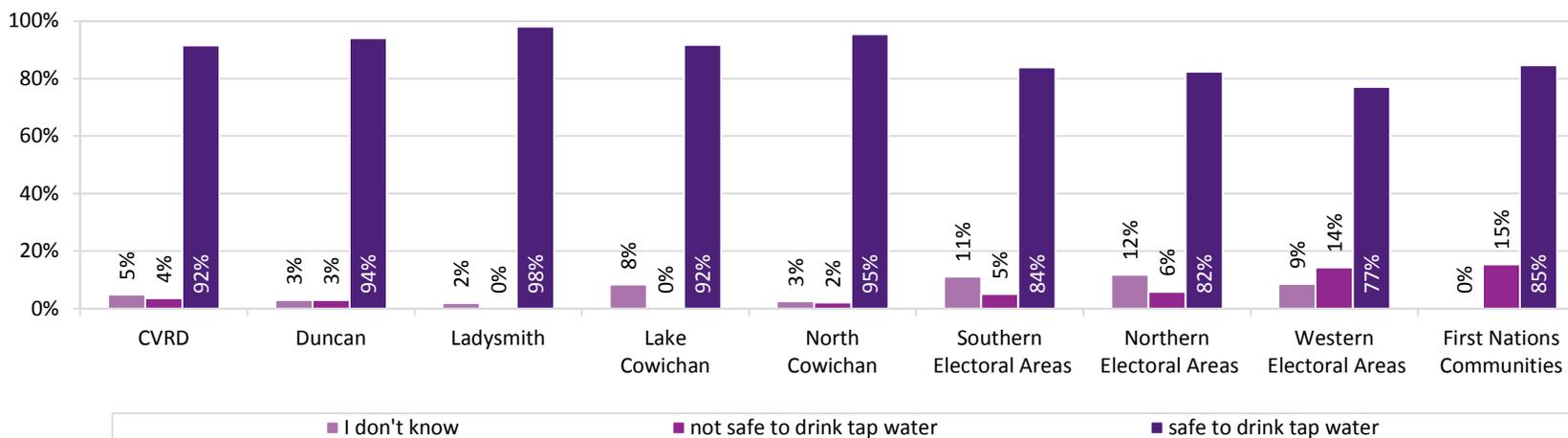
Water Quality

Water quality is the biological, physical and chemical content of water. These parameters can be impacted both naturally (e.g., increased precipitation and other seasonal changes) and through human interactions (e.g., oil spills and improper waste management). Water quality is monitored in Canada to understand potential issues that may cause concern for both ecological and human health (Environment Canada, 2013). Water quality guidelines, standards or criteria are available both provincially and federally; these include guidelines for freshwater, marine water, groundwater and drinking water for a variety of land uses. Throughout BC, the recently established First Nations Health Authority is facilitating water quality testing and interpretation for drinking water sources on reserves (FNHA, 2014).

Additional information on regional and municipal plans is provided under Key Determinant 5: Social Environments (presence of Presence of Community Plans and Policy Addressing Health, Page 107).

The Cowichan Community Health Survey asked respondents if it was safe to drink the tap water in their community (578 people responded). The majority of respondents in each community reported they had access to safe drinking water from the tap. Between 3 and 15% of respondents from the City of Duncan, the Electoral Areas, and First Nations communities reported that tap water was not safe to drink; and between three and 12% of respondents from all communities didn't know if the tap water was safe to drink.

Figure 56: Percentage of respondents reporting safe drinking water (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Number of Boil Water Advisories

The CVRD is gradually upgrading and replacing water systems and taking over small private water systems to ensure high quality drinking water is available throughout the region (CVRD, 2010). However, water quality is an issue for certain areas and protecting the region’s long-term supply of potable water is an increasing concern (Ibid). Boil water advisories indicate where issues have historically been a problem and where issues still

exist. The following table provides a summary of boil water advisories in the region between 2004 and 2014. In addition, there are approximately 50 wells located in First Nations communities (40 private, 10 community wells) and approximately 90% have boil water advisories in place (Cowichan Tribes, 2010).

Table 18: Historical boil water advisories (2004 to 2014)

System	Year	Cause	Properties Affected
South End	2014	Low grade bacterial count, addressed by adding chlorine to the water in three reservoirs.	Residents in the Maple Bay area
South End	2013	Degradation in water quality.	Residents in the Maple Bay area
Lambourn	2011	Sample error, newly constructed wastewater treatment plant with plumbing that was full of debris (dirt).	112 homes
Saltair	2011	Oily, petroleum taste to water, suspected brown algae bloom. “Do not drink notice” ordered by Island Health.	Approximately 50 homes
Arbutus Ridge	2010	Sample error, first sample taken by CVRD staff since takeover of system	616 homes, 2 commercial properties
Arbutus Mountain Estates	2009	New development. System connected prior to operating permit being received from Vancouver Island Health Authority. CVRD assumed responsibility of the system shortly after first homes were constructed.	Residents in Arbutus Mountain Estates
South End	2007	Air valve on force main failed.	4,200 homes, 200 commercial properties
Youbou	2007	High turbidity due to storm event.	Approximately 400 homes
Honeymoon Bay	2006	Change in source from surface to groundwater due to constant turbidity issues. Precautionary measure.	153 homes, 4 commercial properties
Youbou	2004	Cross connection by one user. Home connected to untreated surface water source from a creek and the CVRD.	1 home

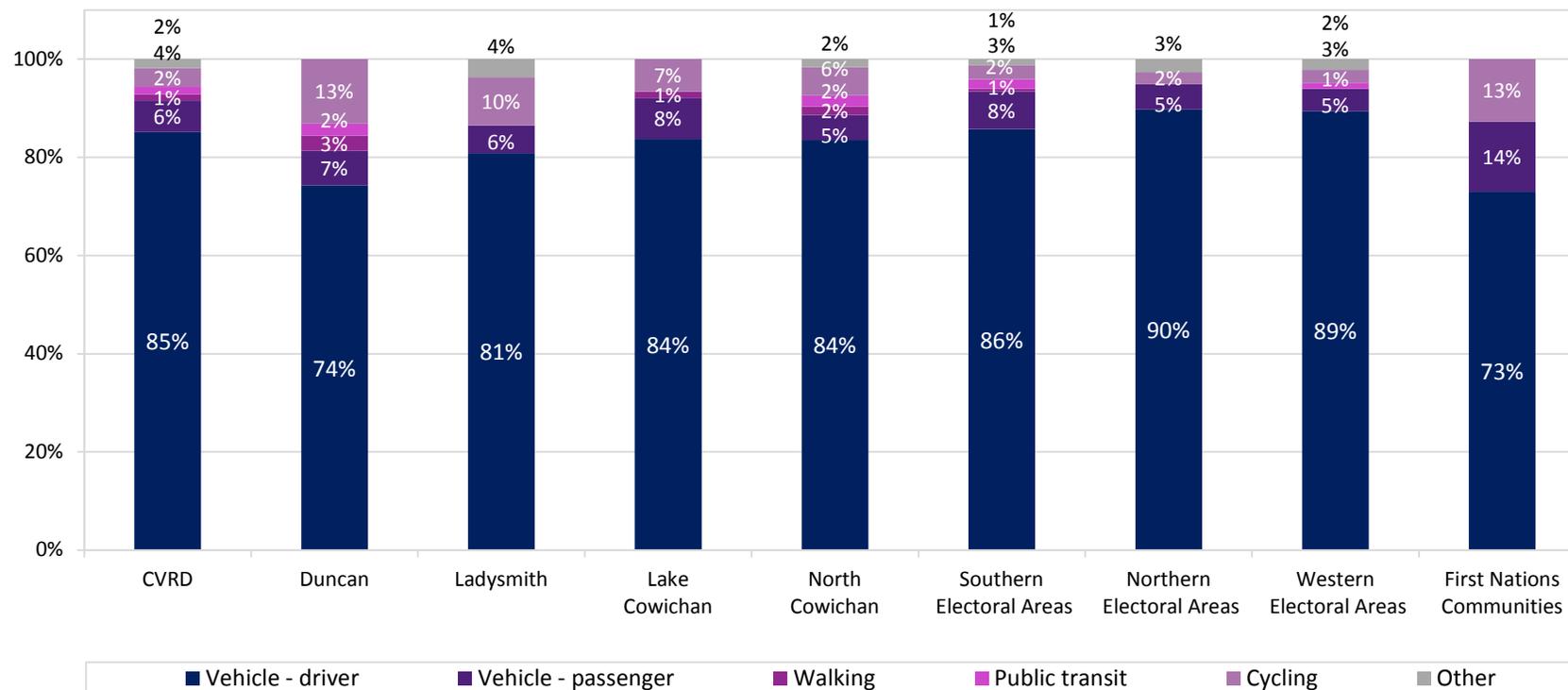
Source: CVRD Engineering Services Department

Transportation & Mobility

Based on the Cowichan Community Health Survey, the majority of daily commuters who were daily commuters reported (85%) driving vehicles to work. Approximately 6% reported carpooling as passengers, 4% cycle to work, and the remaining 5% walk, take public transit, or use other means of transportation

(e.g., taxicab, motorcycle). Survey respondents who commute from the City of Duncan, Town of Ladysmith, are more likely to cycle. Although numbers were small, survey respondents from First Nations communities are more likely to carpool as passengers.

Figure 57: Transportation Mode Split: Usual mode of transportation to work for individuals aged 15 and over in the labour force (2011)



Source: Cowichan Community Health Survey, 2014.

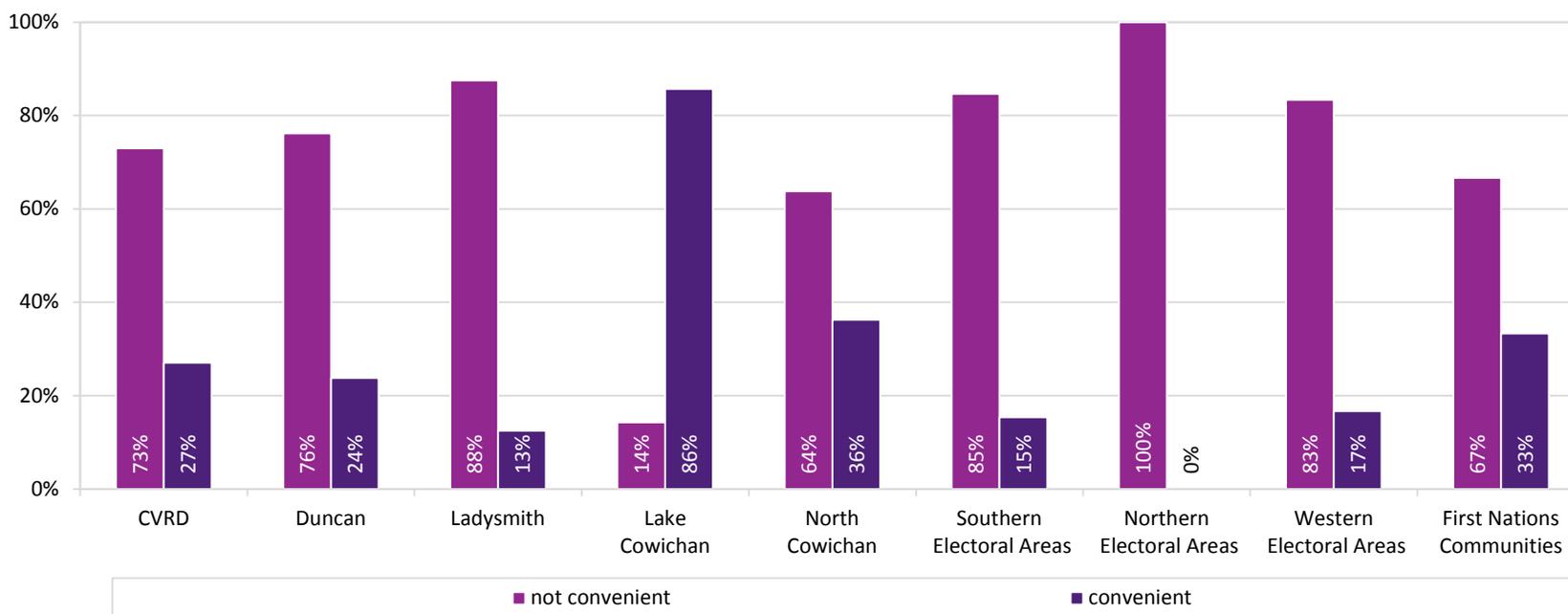
Note: See Data Sources section (page 8) for details on survey respondents.

Accessible and Convenient Transit Service

The Cowichan Community Health Survey asked respondents if local transit services and routes got them where they needed to go within a reasonable time frame (576 responses). Of those who responded, 347 respondents did not take transit and 55 didn't know about transit services in their community. Of the 174 respondents who take transit, only 9% have access to

convenient transit services and routes that get them where they need to go in a reasonable time frame. Transit access varies greatly by community; the majority (86% of respondents) from Lake Cowichan reported having access to convenient transit compared to zero respondents from the Northern Electoral Areas.

Figure 58: Percentage of survey respondents' with access to convenient transit services and routes (2014)



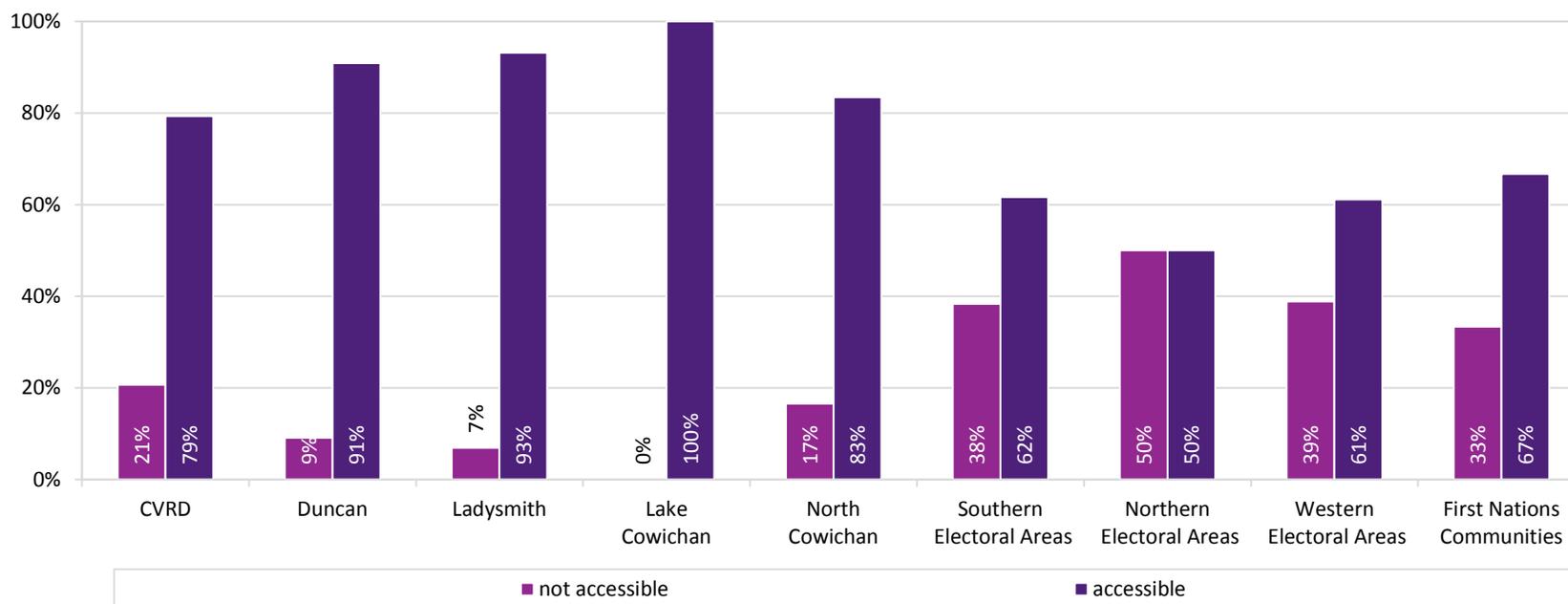
Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

The survey asked respondents if there was a transit stop within a 10 minute walk of their home. The majority of the 576 respondents did not take transit or didn't know; a 'yes' or 'no' answer was provided by 324 respondents. Of these respondents, 79% did have a transit stop relatively close to their home. Access to transit varied from one community to the next. Respondents from the Town of Lake Cowichan, Town of Ladysmith, City of Duncan, and North Cowichan reported greater access to local transit than the Electoral Areas and First Nations communities.

It is also important to note that communities such as the Town of Ladysmith, City of Duncan, and North Cowichan have relatively good access to local transit, but high proportions of respondents who reported that transit service and/or routes were not convenient. Respondents were also asked to provide general comments about transit services in their community. Numerous comments addressed the frequency of service, lack of bus shelters, and limited local routes, suggesting that local transit is generally not convenient for many CVRD residents.

Figure 59: Percentage of survey respondents' with access to a transit stop within a 10 minute walk of their home (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Paratransit Service

Volunteer Cowichan operates the handyDART paratransit service, an assisted shared-ride program, providing between 12,750 and 13,900 rides annually in the past three years. A new venture, the Cowichan Cooperative Connections, has recently been established to help seniors with day-to-day tasks so that they can continue to live independently in their own homes and remain connected to their communities.

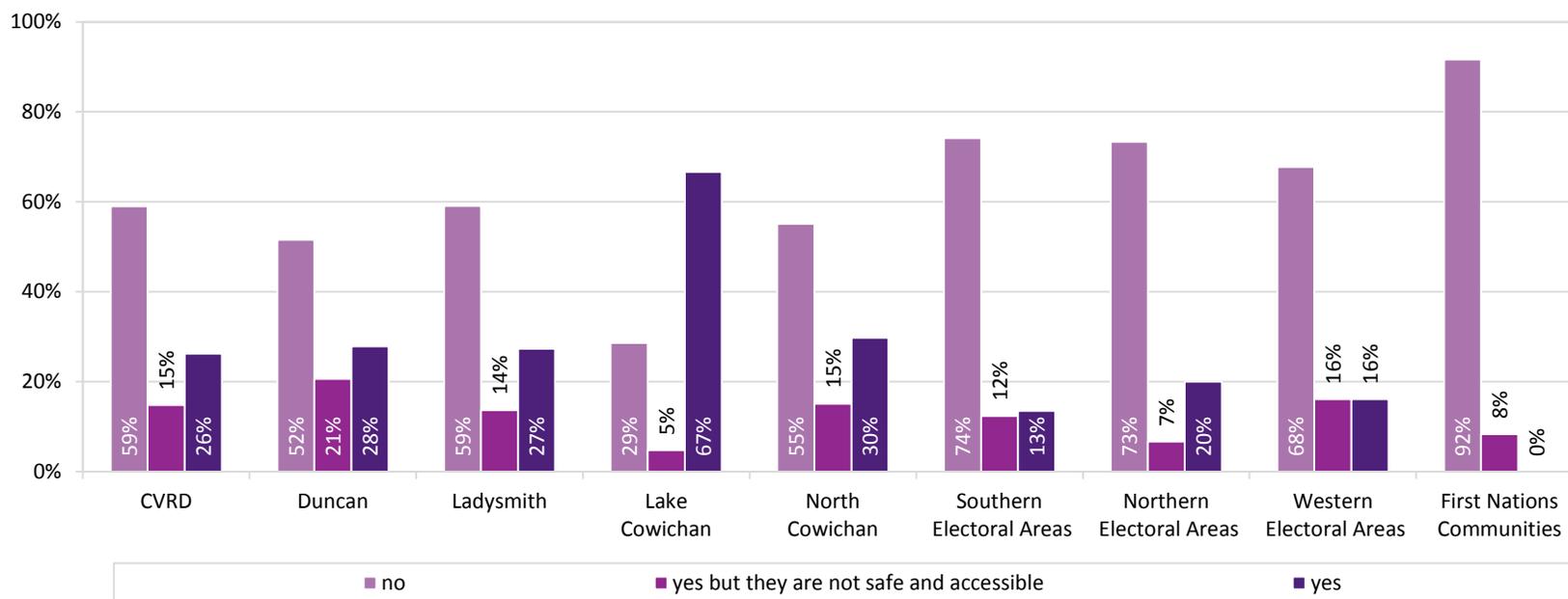
Safe and Accessible Bike Lanes

The Cowichan Community Health Survey asked respondents if there were safe and accessible bike lanes or routes in their community (534 responses). The majority of respondents (59%) reported there were no safe and accessible bike lanes or routes to get around their community. A minority of 15% of respondents reported that bike lanes or routes were available in their community but they were either unsafe or inaccessible. And just over one quarter of

respondents reported there were safe and accessible bike lanes/routes in their community. Responses varied from one community to another; two thirds of respondents from Lake Cowichan and close to one third of respondents from the city of Duncan, Town of Ladysmith, and North Cowichan reported safe bike routes while respondents from First Nations communities and Electoral Areas were much less likely to report safe and accessible bike lanes.

Respondents were also asked to provide comments to explain why local bike lanes and routes were unsafe or inaccessible. Numerous comments mentioned they did not feel safe cycling on roads due to traffic, unsafe drivers, parked cars on roads, narrow or unpaved shoulders, and deep ditches along roadsides and a few respondents noted they did not feel safe on off-road bike trails as they are out of view, overgrown, and not well lit. Other comments noted that bike lanes and routes were not accessible from their homes or not easy to get around due to hills and a lack of direct routes.

Figure 60: Percentage of survey respondents who reported safe and accessible bike lanes/routes in their community (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Safe and Accessible Pedestrian Routes

The Cowichan Community Health Survey also asked respondents if there were safe and accessible pedestrian routes in their community (590 responses). Just over half of all respondents (53%) reported safe and accessible pedestrian routes. Lake Cowichan respondents were most likely to report quality pedestrian environments followed by Town of Ladysmith, City of Duncan, North Cowichan, and the Northern Electoral Areas. The majority of respondents from the Southern and Western Electoral Areas and First Nations communities reported there

were no local pedestrian routes or the routes that did exist were unsafe or inaccessible.

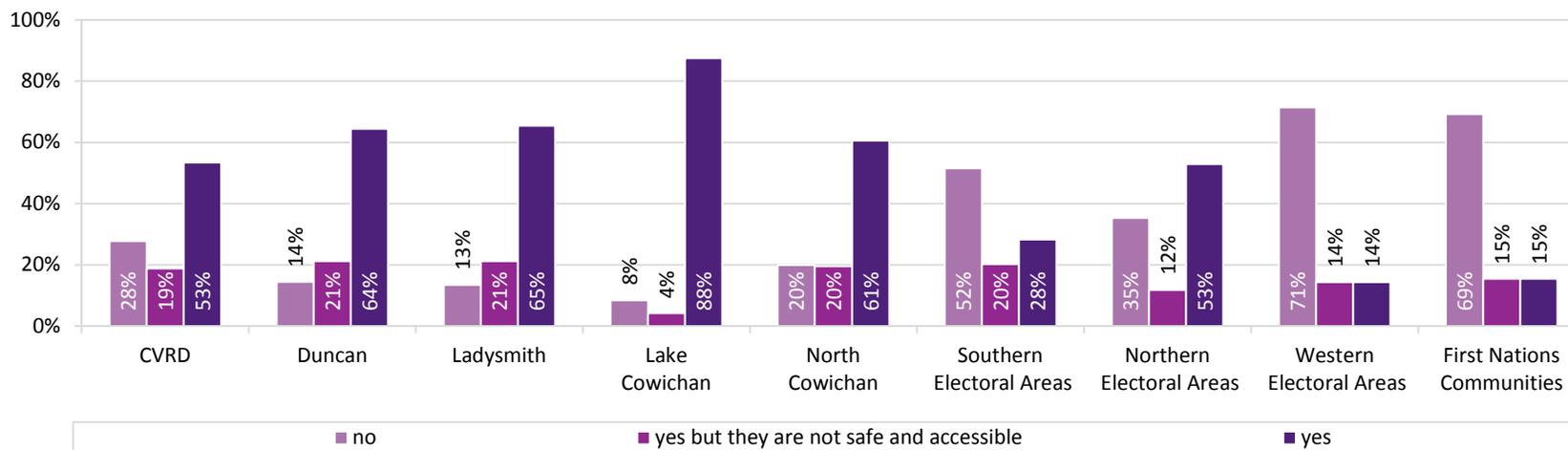
Respondents were also asked to provide comments to explain why local pedestrian routes were unsafe or inaccessible. Numerous comments mentioned a lack of sidewalks and unsafe road conditions due to traffic, limited visibility, unsafe drivers, parked cars on roads, narrow or unpaved shoulders, a lack of lighting, and dangerous intersections. Several respondents noted that these

conditions made it difficult for children or parents with strollers to get around on foot. Other comments noted that walking is not convenient in rural areas and pedestrian routes were mainly for recreation.

Local knowledge and observations of the research team notes that the lack of safe and accessible pedestrian facilities (sidewalks and

trails) is particularly acute within and around the Cowichan First Nation’s reserve. Pedestrians, including mothers with children in strollers, are frequently seen immediately adjacent to or within the paved lanes of roads such as Boys Road, T’suhalem, and the Trans-Canada Highway. The survey results reveal that 69% of First Nations’ respondents reported no safe and accessible pedestrian routes in their community.

Figure 61: Percentage of survey respondents who reported safe and accessible pedestrian routes in their community (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Community Safety

There are many organizations dedicated to community safety in the CVRD. In 2008, the Safer Futures ‘Making the Links’ project team and the Cowichan Women Against Violence Society prepared the Cowichan Region Safety Lens for the Community Safety Advisory Committee, available at www.cvrdb.ca/DocumentView.aspx?DID=2175. The Safety Lens

(2008) provides a framework for local governments, planners, and developers to integrate safety into decision making, social infrastructure (e.g. services, affordable housing, training, etc.) and physical infrastructure (e.g., design of buildings, parking, sidewalks, land use, etc.).

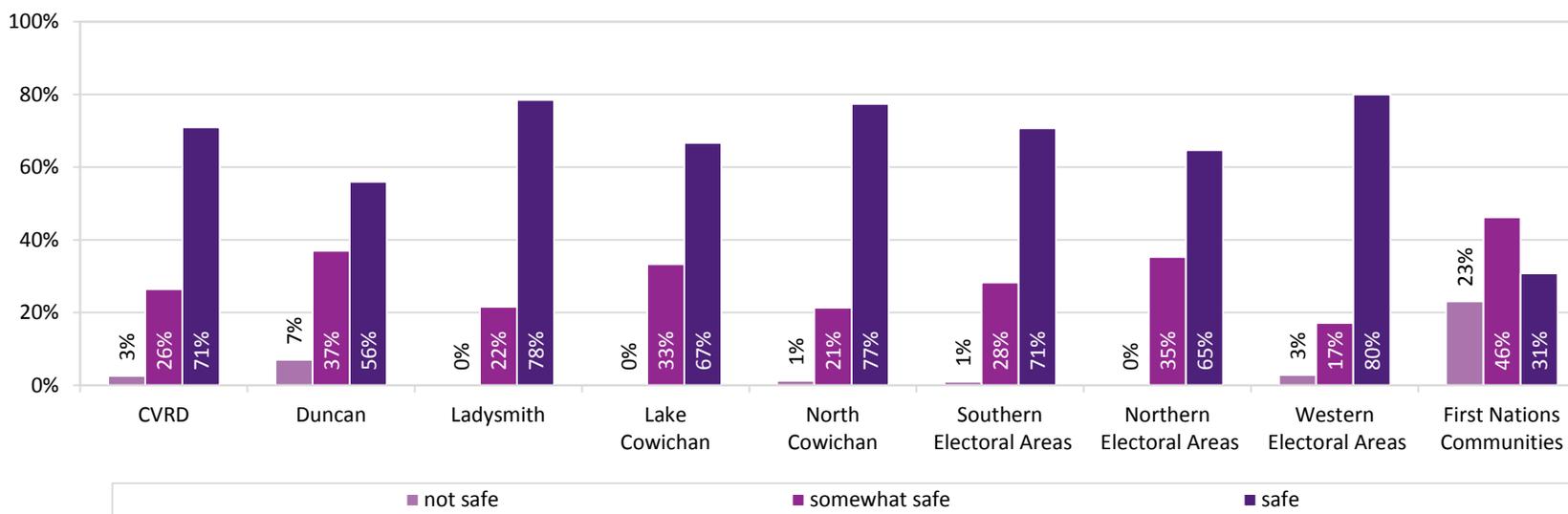
Perception of Safety

The Cowichan Community Health Survey asked respondents how safe they felt their neighbourhood was and what, if anything, would make it feel safer (578 responses). The majority of respondents (71%) felt ‘very’ or ‘extremely’ safe; just over one quarter of respondents felt ‘somewhat’ safe; and just 3% felt ‘not very’ or ‘not at all’ safe. The proportion of respondents who did not feel safe was highest in First Nations communities although it is important to note that there were a limited

number of respondents from these communities so the results are less representative.

Numerous respondents noted that better lighting would enhance community safety, as well as designated bike lanes, sidewalks, and speed bumps or other traffic control measures. Several comments noted that neighbourhood watches and or better police presence could help to prevent or address petty crimes and break-ins.

Figure 62: Percentage of survey respondents who reported feeling safe in their neighbourhood (2014)



Source: Cowichan Community Health Survey, 2014.

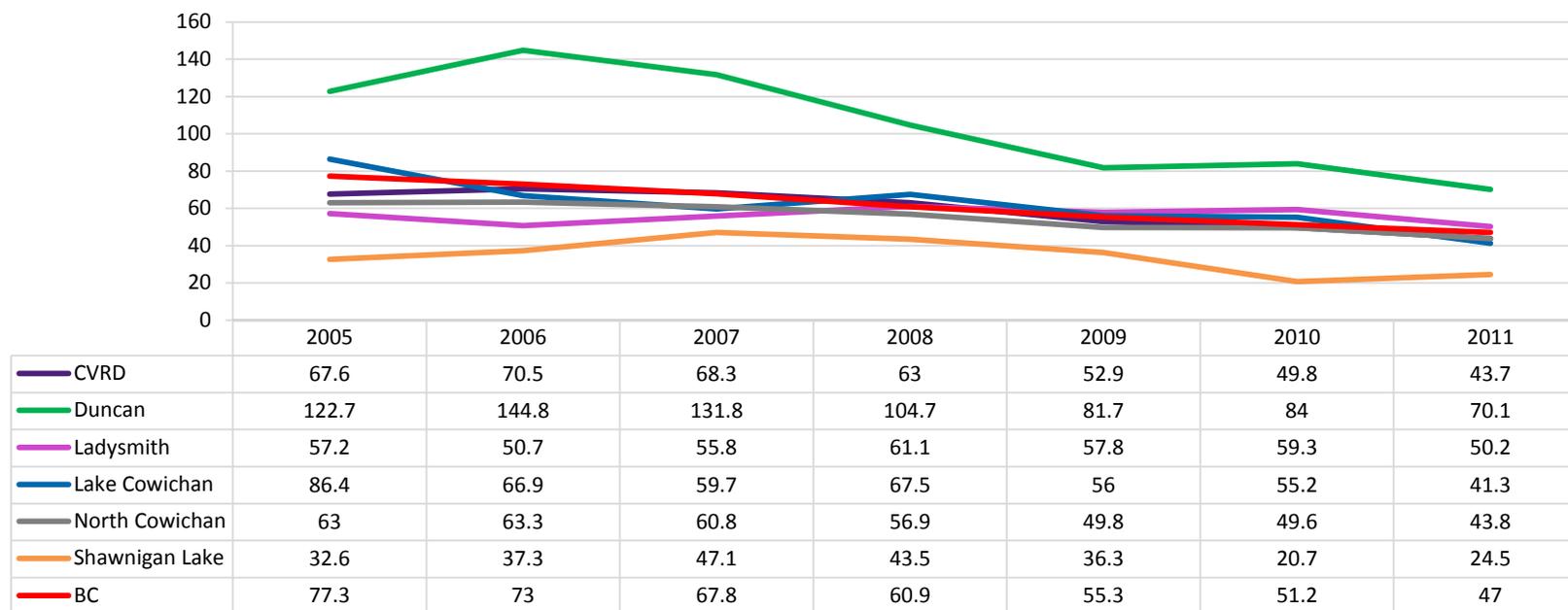
Note: See Data Sources section (page 8) for details on survey respondents.

Property Crime Rates

Within the region, The City of Duncan had the highest number of property crimes between 2005 and 2011 with 70.1 offences (or incidents) per 1,000 people in 2011. Shawnigan Lake had the lowest number of property crimes during this same period with 24.5 offences per 1,000 people in 2011. The number of offences

declined in all communities over the time period with the CVRD average decreasing from a high of 70.5 offences per 1,000 people in 2006 to a low of 43.7 offences per thousand in 2011, below the provincial average.

Figure 63: Number of property crimes per 1,000 people (2005 to 2011)



Source: Ministry of Justice, n.d.

Notes:

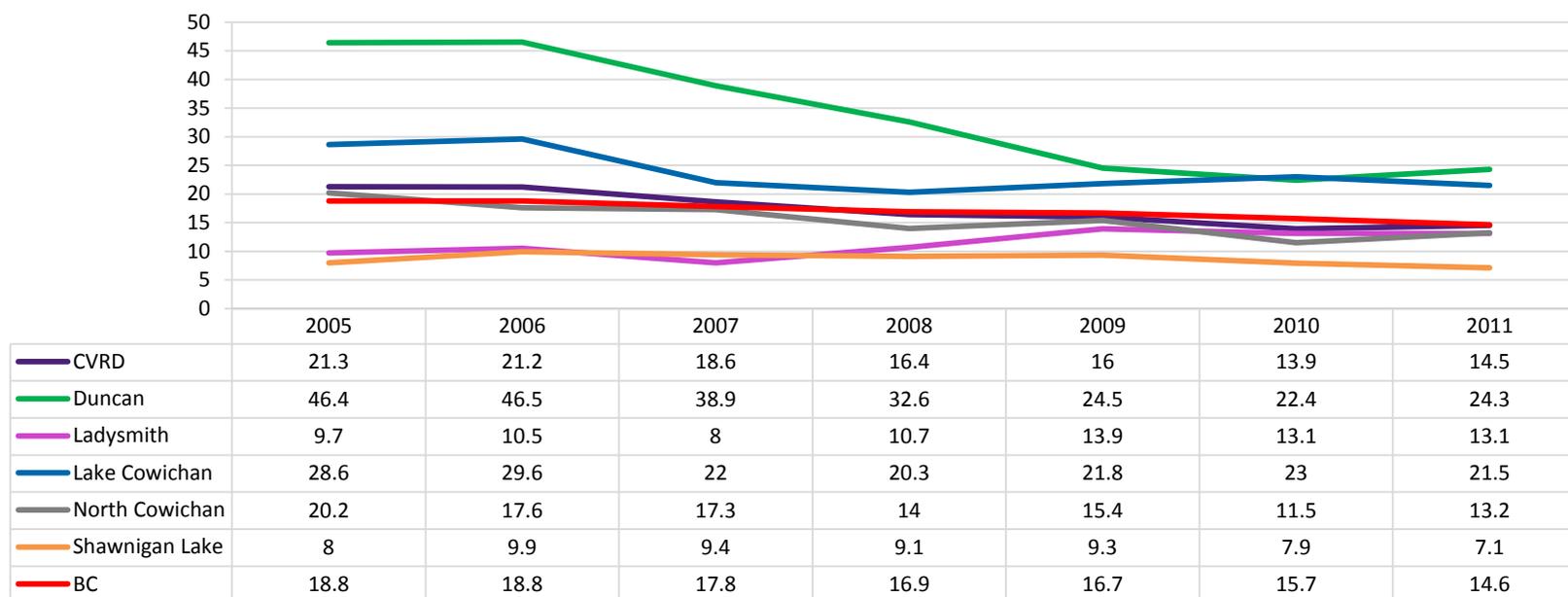
- a) Property crimes include break and enter, theft, possession of stolen property, fraud, mischief, and arson.
- b) Crime rates apply to police jurisdictions rather than census subdivisions. In the Cowichan Valley, the RCMP provide municipal police services to the Ladysmith and North Cowichan and provincial RCMP services to smaller communities and rural areas including Duncan, Shawnigan Lake, and Lake Cowichan. Therefore, only crime data for these communities is available.

Violent Crime Rates

Crime rates for violent crimes per 1,000 people between 2005 and 2011 were also highest in the City of Duncan and lowest in Shawnigan Lake (electoral area). Similar to property crime, violent crime offences have declined in the CVRD over time with a high of 21.3 per 1,000 people in 2005 and a low of 13.9 per thousand in 2010. Some communities, such as the Town of Lake Cowichan and

the Shawnigan Lake Electoral Area, saw minor increases in certain years but experienced an overall decrease between 2005 and 2011. The Town of Ladysmith was the only community to see an overall increase between 2005 and 2011 although it still has one of the lowest crime rates in the region.

Figure 64: Number of violent crimes per 1,000 people (2005 to 2011)



Source: Ministry of Justice, n.d.

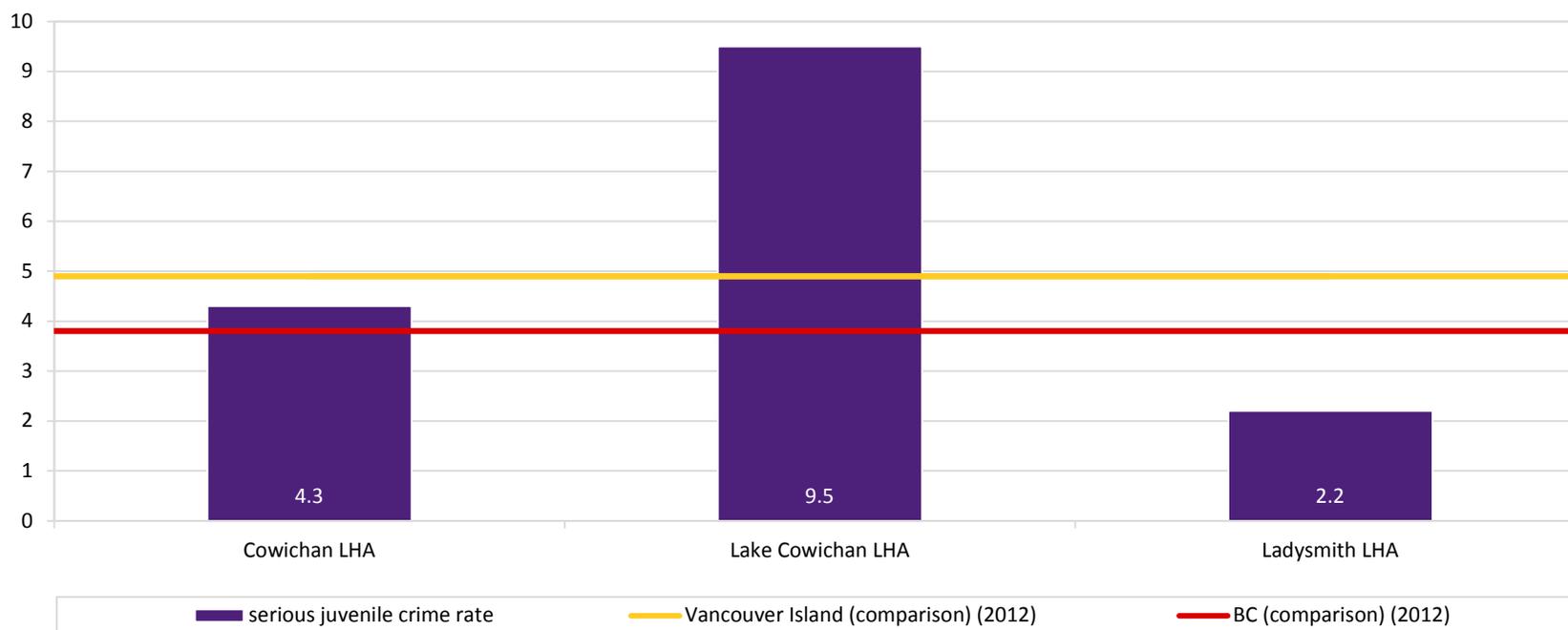
Notes:

- a) Violent crimes include homicide, attempted murder, sexual and non-sexual assault, sexual offences against children, abduction, forcible confinement, kidnapping, robbery, criminal harassment, extortion, uttering threats, and threatening or harassing phone calls.
- b) Crime rates apply to police jurisdictions rather than census subdivisions. In the Cowichan Valley, the RCMP provide municipal police services to the Ladysmith and North Cowichan and provincial RCMP services to smaller communities and rural areas including Duncan, Shawnigan Lake, and Lake Cowichan. Therefore, only crime data for these communities is available.

Serious juvenile crime is measured by local health area rather than police jurisdiction or census subdivision. Serious juvenile crime rates in the Cowichan and Lake Cowichan LHAs were above the provincial average (3.8 per 1,000 juveniles). The Cowichan LHA

was under the average rate for Vancouver Island (4.9 per 1,000 juveniles) and the Ladysmith LHA was well below both the provincial and Vancouver Island rates.

Figure 65: Juvenile serious crime rate per 1,000 people (aged 12 to 17)

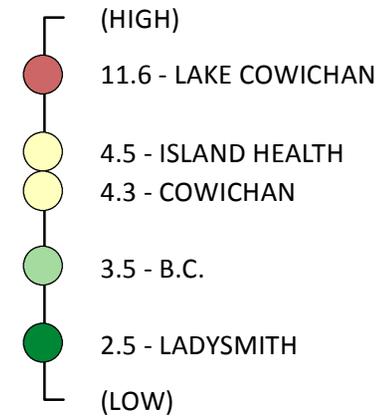


Source: Vancouver Island Health Authority, 2012.

Note: Serious juvenile crimes include break and entering, crimes with weapons, or assaults resulting in serious injury.

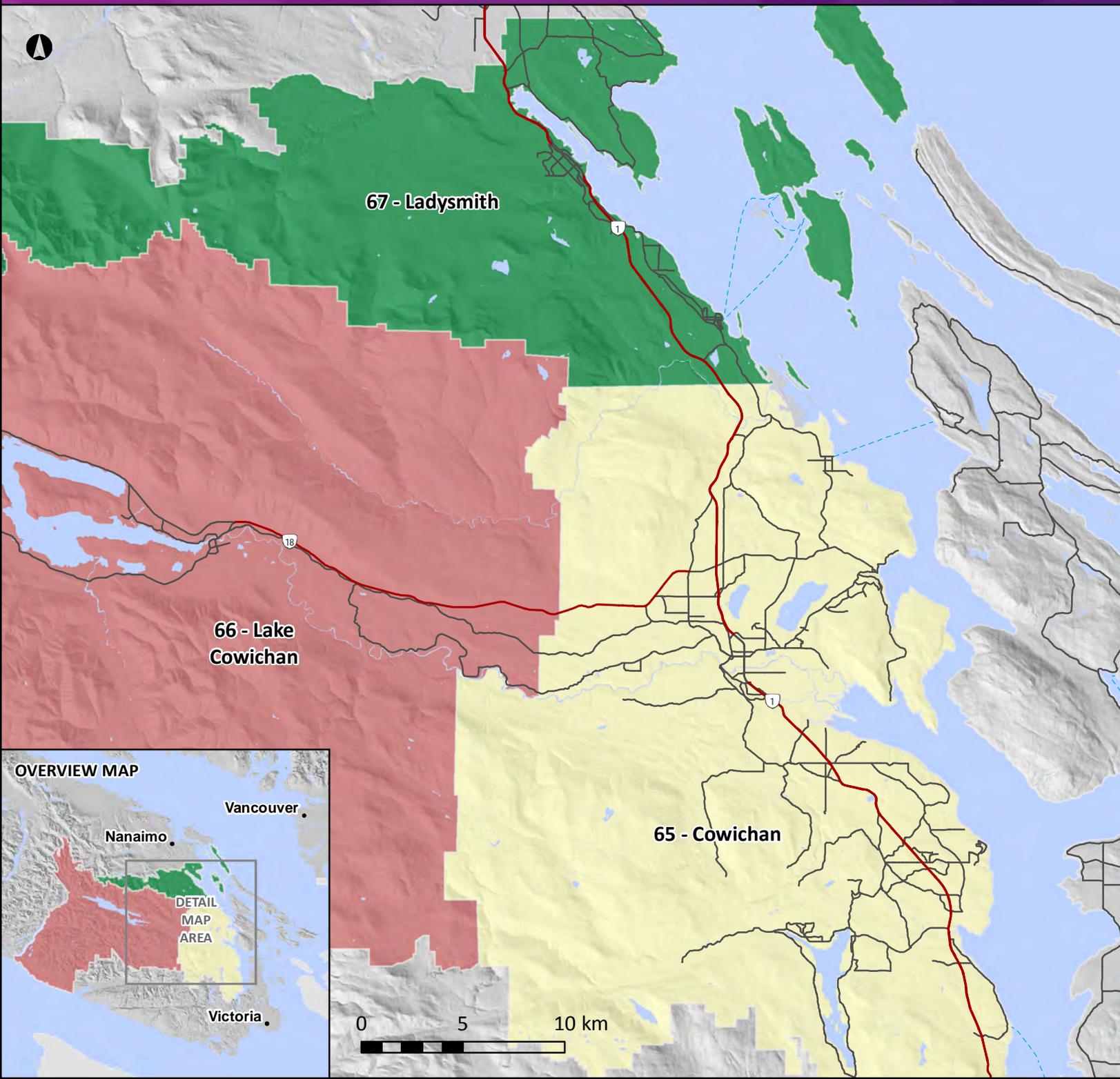
JUVENILE CRIME

**CRIME RATE PER 1,000
POPULATION 12-17,
2009-2011 AVERAGE BY
LOCAL HEALTH AREA**



Statistical data from BC Statistics Agency, Statistics Canada and Canadian Centre for Justice Statistics (2009-2011). Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.

Projection: UTM Zone 10 Datum: NAD 83
Date: May 1, 2014



Built Environment

Population Density

Overall, the population density of the CVRD is low at 23.1 people per square km in 2011, compared to 71.9 people per square km in the Regional District of Nanaimo. The relative low density is due in part, to the vast privately held forest lands comprising the majority of the region. Settled areas, however, are also characterised by low densities that range primarily between 50 and 500 people per square km. Only the Town of Ladysmith and City of Duncan have moderate and high densities of between 500 - 700 and 2,382 people per square km, respectively. The nature of census tract boundaries, which frequently encompass largely unpopulated areas, fails to capture neighbourhoods that are densely populated and serve to promote physical activity. Accordingly, the population density map on the following page identifies higher density, mixed use areas. These include the historic communities of Cowichan Bay, downtown Duncan, the village of Crofton, downtown Chemainus, the historic core of Ladysmith, and the central urban neighbourhood of Lake Cowichan. These communities were first settled prior to World War II and their land use patterns reflect walkable distances between destinations.

As a characteristic of mixed use neighbourhoods, the relationship between population density and health is well documented. British Columbia's Provincial Health Services Authority (2007) summarizes this connection as follows:

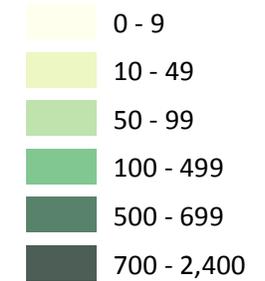
- walkable neighbourhoods are associated with changes towards more active travel behaviour;

- walkable neighbourhoods are associated with lower body weights;
- increased density is associated with less pollution;
- pedestrian-friendly streetscapes encourage physical activity;
- pedestrian-friendly streetscapes are associated with fewer traffic accidents and less crime; and,
- public transit encourages physical activity.

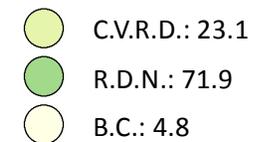
Another important health impact of density is the increased risk of social isolation for seniors in low density areas. As seen in the percentage of seniors living alone (under Key Determinant 2: Social Support Networks), there is a high proportion of seniors living alone in most communities throughout the region. Participants in several workshops also noted that a rising number of seniors are living alone in isolated areas with no neighbours checking on them. They are also subject to the limitation of relying extensively on the automobile to access services. A recent initiative, the Elder's Care Co-op, seeks to address the needs of seniors who remain in their own homes and remain connected to their communities. The co-op will help seniors with day-to-day tasks that can become more difficult as people age so they can continue to live in their own homes and still remain connected to their communities. Services that may be included are friendly visiting, transportation to appointments, yard work, minor home repairs, snow shoveling, housekeeping and grocery shopping. (Cowichan Valley Citizen, Grant to Launch Seniors Co-op, April 18, 2014).

POPULATION DENSITY

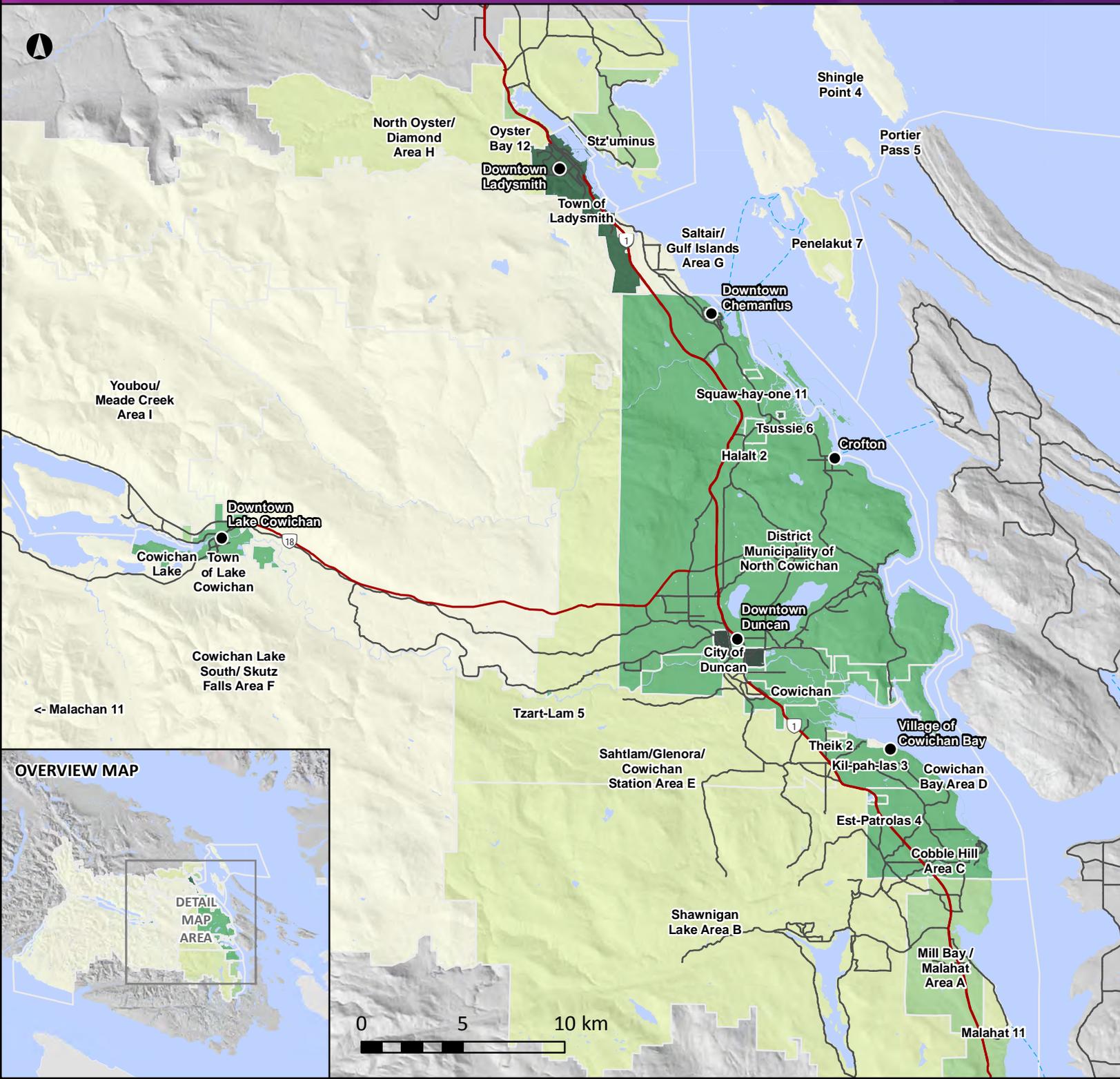
POPULATION PER SQUARE KILOMETRE IN 2011 BY CENSUS SUB-DIVISION



REGIONAL COMPARISONS



Statistical Data from Statistics Canada 2011 Census of Population. Boundary data from GeoBC. Road and water data from CanVec11 © Department of Natural Resources Canada, all rights reserved. Elevation data from the Government of British Columbia WMS layer.
Projection: UTM Zone 10 Datum: NAD 83
Date: May 1, 2014



Housing Quality and Age

Just over half of all housing in the CVRD was constructed after 1981. Some communities, such as City of Duncan, Town of Lake Cowichan and the Northern and Western Electoral Areas, have higher proportions of older housing. However, the age of housing does not necessarily relate to the quality of housing as

can be seen in the figures below. The proportion of housing in need of major repair is significantly higher in First Nations communities, where the majority of housing was constructed after 1981.

Figure 66: Age of housing (as of 2011)

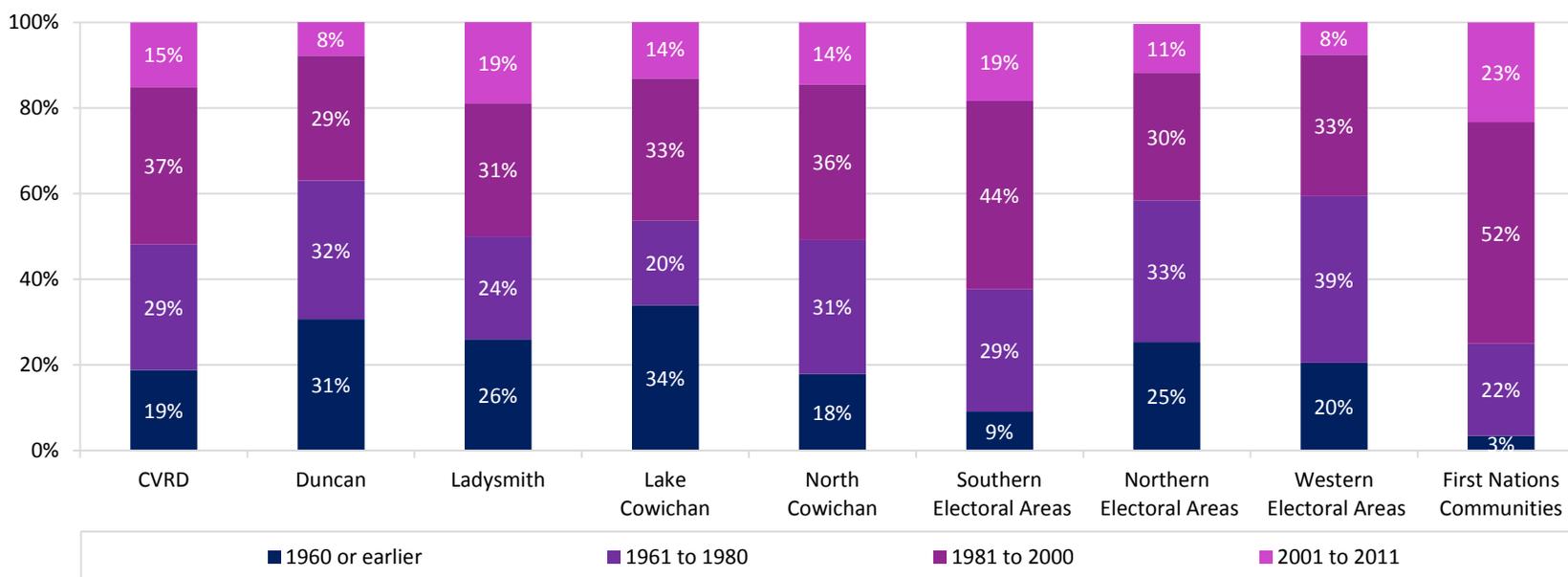
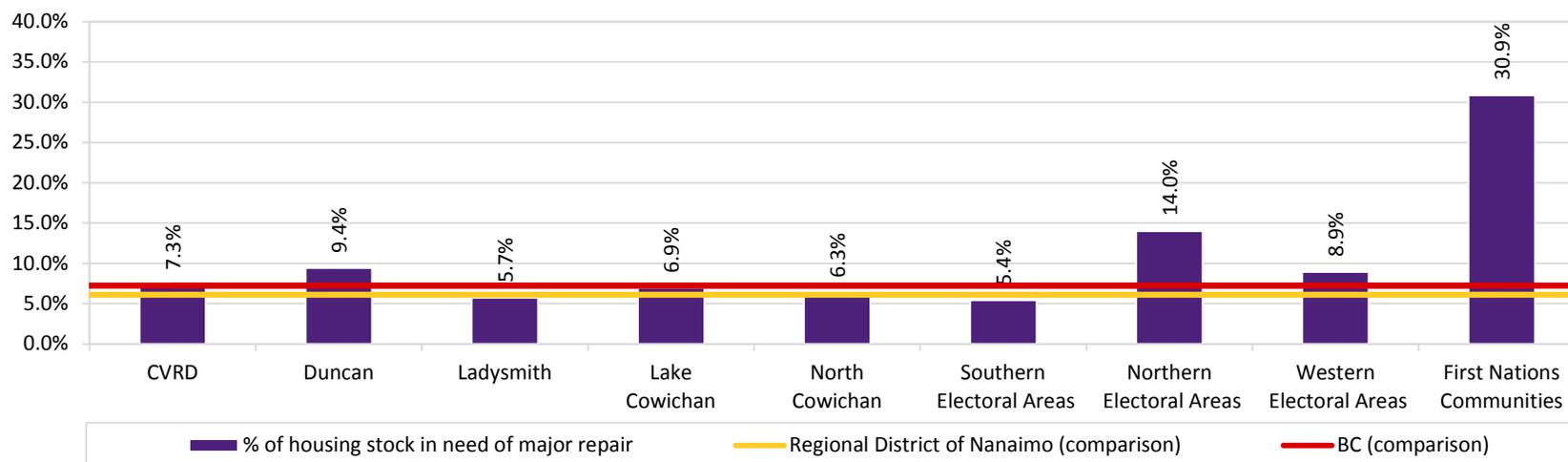


Figure 67: Housing in need of major repair (2011)



Source: Calculated from Statistics Canada 2013a



Key Determinant 7: Personal Health & Coping Skills

Personal health and coping skills are actions that individuals can take to promote self-care and prevent disease, develop self-reliance and the ability to solve problems, and make choices that can have a positive impact on their health and well-being (Public Health Agency of Canada, 2013).

As with all of the determinants of health, there is a connection between a person's personal coping skills and many of the other determinants of health. For example, supportive social networks and physical environments that encourage walking and cycling can enhance a person's ability to make healthy decisions (Public Health Agency of Canada, 2013).

Key Findings:

- Over half of Cowichan Community Health Survey respondents felt that in general, they got enough sleep or rest; however, a significant portion (46%) did not.
- The majority (84%) of applicable survey respondents in the CVRD breastfed for at least some period of time and 54% breastfed for 6 months or more.
- Only 9% of survey respondents reported consuming seven or more servings of fruits and vegetables per day. The majority (53%) consumed between four and six servings, and over one third of respondents (38%) consumed four servings or less per day. However, over half of respondents reported that they never or very rarely consumed unhealthy foods such as sugary drinks, salty and sugary snacks, and fast food.
- The majority of respondents (44%) exercised three or more times per week. Approximately one quarter of respondents exercised less than once a week.
- The majority of respondents (61%) spend less than two hours per day at home in front of a television or computer screen. Just over one third of respondents spend three to five hours per day, and a small percentage (3%) spend six hours or more per day.
- The majority of respondents (89%) do not currently smoke and over half have never smoked. However, the percentage of women who reported smoking while pregnant was higher in the CVRD than the province as a whole in 2012. The Lake Cowichan LHA had the highest proportion of women who smoked during pregnancy (21.5%).
- Alcohol sales per capita were higher in the CVRD than the province as a whole in 2012. Sales in the Cowichan and Ladysmith LHAs were higher than the provincial average but lower than the Vancouver Island average. Sales in the Lake Cowichan LHA were 29% above the provincial average and 18% above the Vancouver Island average.
- The majority of survey respondents (87%) made changes in the past year to improve their health and well-being. Over half of respondents changed their diet and increased exercise and close to half tried to achieve a healthier weight.

Table 19: Personal Health and Coping Skills Indicator Overview

Indicator Name	Description	Relevance to Health and Well-being
Sleep Habits	<ul style="list-style-type: none"> The percentage of survey respondents who feel they generally get enough sleep or rest. 	<ul style="list-style-type: none"> Sleep has numerous impacts on an individual’s health and well-being; lack of sleep can impact the nervous system, mood, emotional and social mental function, learning, memory and physical performance (especially dangerous while driving), and proper growth and development in children as well as many other impacts (Mental Health Canada, n.d.).
Breastfeeding Practices	<ul style="list-style-type: none"> The percentage of (applicable) survey respondents who breastfed their children for six months or more, for six months or less, or not at all. 	<ul style="list-style-type: none"> Breastfeeding during the first six months is recommended, with the exception of a few select medical conditions, for healthy infant growth and development (World Health Organization and UNICEF, 2003). A joint statement from Health Canada, the Canadian Paediatric Society, Dieticians of Canada, and the Breastfeeding Committee for Canada (n.d.) recommends exclusive breastfeeding for the first six months and breastfeeding with complementary feeding for the first two years to provide proper nutrition, immunologic protection, and healthy growth and development for infants and toddlers.
Diet	<ul style="list-style-type: none"> The percentage of survey respondents who consume seven or more servings of fruits and vegetables per day, four to six servings per day, and less than four servings per day as well as the percentage of survey respondents who regularly consume unhealthy foods. 	<ul style="list-style-type: none"> The food choices that a person makes can have an impact on their overall health. Healthy foods such as fruits and vegetables can contribute to better health. Consumption of fat and other unhealthy foods, on the other hand, has been linked to cancer and coronary heart disease (Public Health Agency of Canada, 2013).

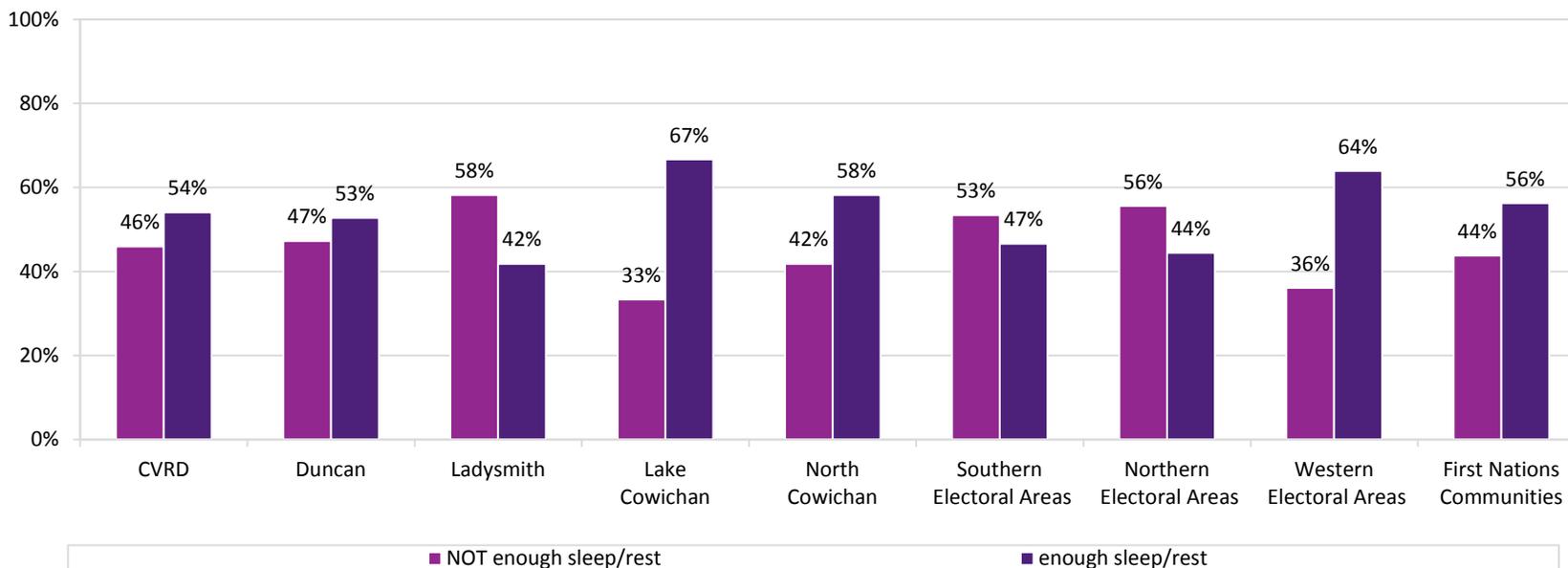
Indicator Name	Description	Relevance to Health and Well-being
Physical Activity & Sedentary Behaviour	<ul style="list-style-type: none"> The percentage of survey respondents who exercise regularly, occasionally, and rarely as well as the average amount of time survey respondents spend in front of computer or television screens (outside of work or school). 	<ul style="list-style-type: none"> Decreased physical activity and increased screen time can contribute to unhealthy weights and decreased energy (National Heart, Lung and Blood Institute, n.d.).
Alcohol and Tobacco Use	<ul style="list-style-type: none"> The percentage of women who reported smoking during pregnancy (by local health area) as well as the percentage of survey respondents, who regularly smoke, used to smoke, and have never smoked. Alcohol sales per capita (by local health area) as well as the average number of times per week survey respondents consumed alcohol in the past 12 months. 	<ul style="list-style-type: none"> Tobacco products and second-hand smoke are known to contribute to an individual's risk for lung cancer, chronic bronchitis, emphysema and cardiovascular disease (Vancouver Coastal Health, 2009). Over-consumption of alcohol is known to put people at higher health risks for a variety of reasons including alcoholic liver cirrhosis, suicide, motor vehicle collisions and falls (Vancouver Coastal Health, 2009).
Effort to Improve Health and Well-being	<ul style="list-style-type: none"> The percentage of survey respondents who took steps in the past 12 months to improve their health and well-being. 	<ul style="list-style-type: none"> Changes to personal health practices, such as diet, sleep, and exercise, can improve an individual's overall health and well-being.

Sleep Habits

People require different amounts of sleep; some people require as much as 10 hours of sleep per day while others may need only 5 hours per day. Factors such as age, activity, pregnancy, physical or mental health conditions, and other variables can all impact the amount of sleep an individual needs. Therefore, Cowichan Community Health Survey respondents were asked if they felt they generally got an adequate amount of sleep and rest, rather than asking about the amount of hours they slept per day. Over

half of respondents (618 responses) felt that they got enough sleep/rest; however, a significant portion (46%) did not. Certain communities, such as Lake Cowichan and the Western Electoral Areas had higher proportions of people who felt they got enough sleep or rest while other communities, such as the Southern Electoral Areas, had more people who felt they did not get enough sleep or rest.

Figure 68: Percentage of survey respondents who do or do not feel they generally get enough sleep or rest (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

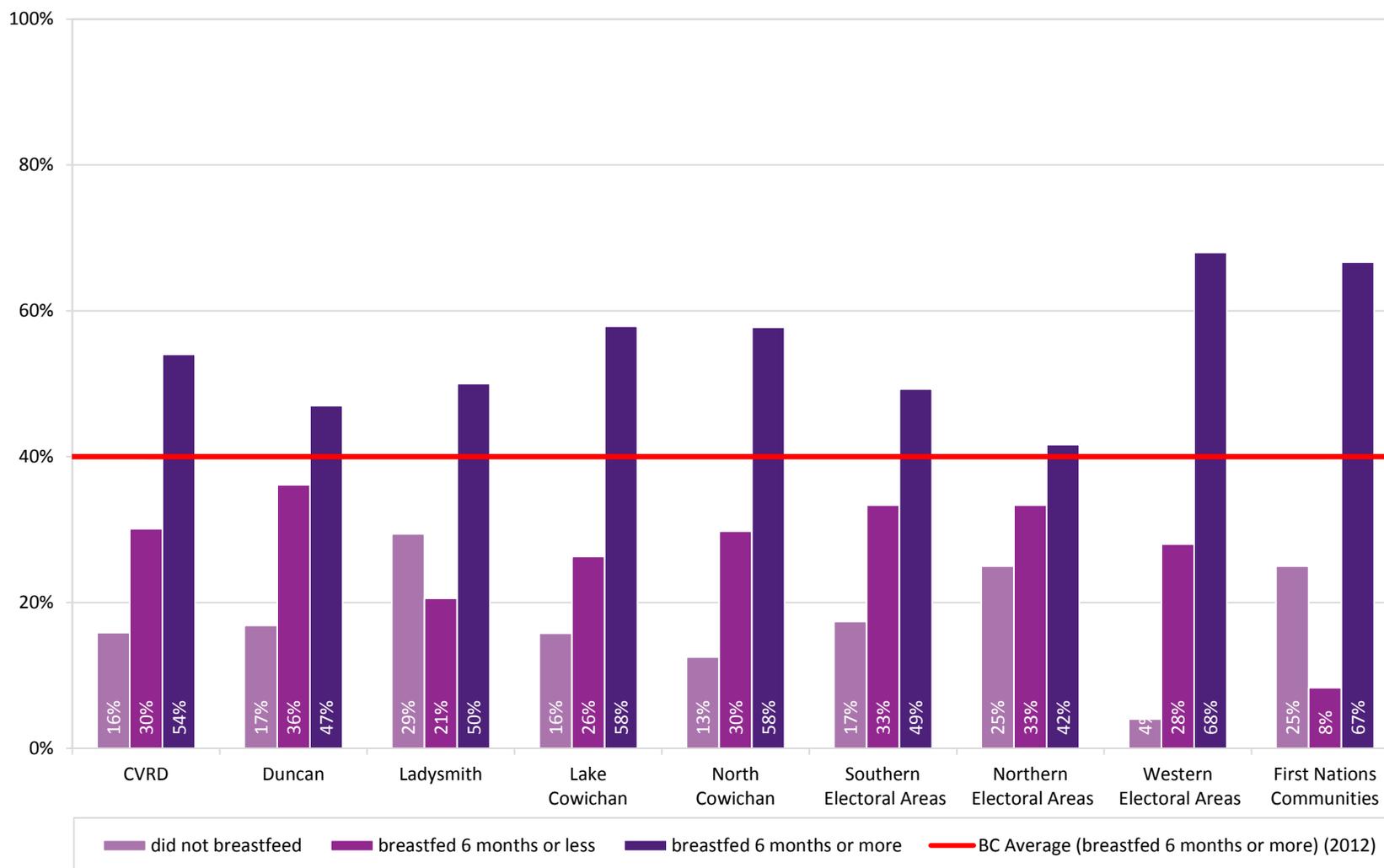
Breastfeeding Practices

Exclusive breastfeeding (the infant receives no food or liquid other than breast milk) during the first six months is important for a child's short and long-term health (Health Canada et al., n.d.). However, the introduction of complementary foods (foods and liquids other than breast milk) may be introduced a few weeks before or after the six month mark, depending on the infant's readiness (World Health Organization and UNICEF, 2003).

The majority (84%) of Cowichan Community Health Survey respondents (422 responses) in the CVRD breastfed for at least

some period of time and 54% breastfed for six months or more. Island Health statistics reveal that 70.9% of all mothers within the Central Island Area breastfeed exclusively beyond six months of age. This is higher than the 51.4% rate for all of Island Health. Survey respondents from all CVRD communities showed higher proportions of individuals who breastfed for six months or more than the provincial average of 40%. Note that given the disproportionately high number of women over 50 who responded to the survey, these results are skewed toward an older demographic.

Figure 69: Breastfeeding practices of survey respondents (2014)



Source: Cowichan Community Health Survey, 2014; Statistics Canada, 2012c.

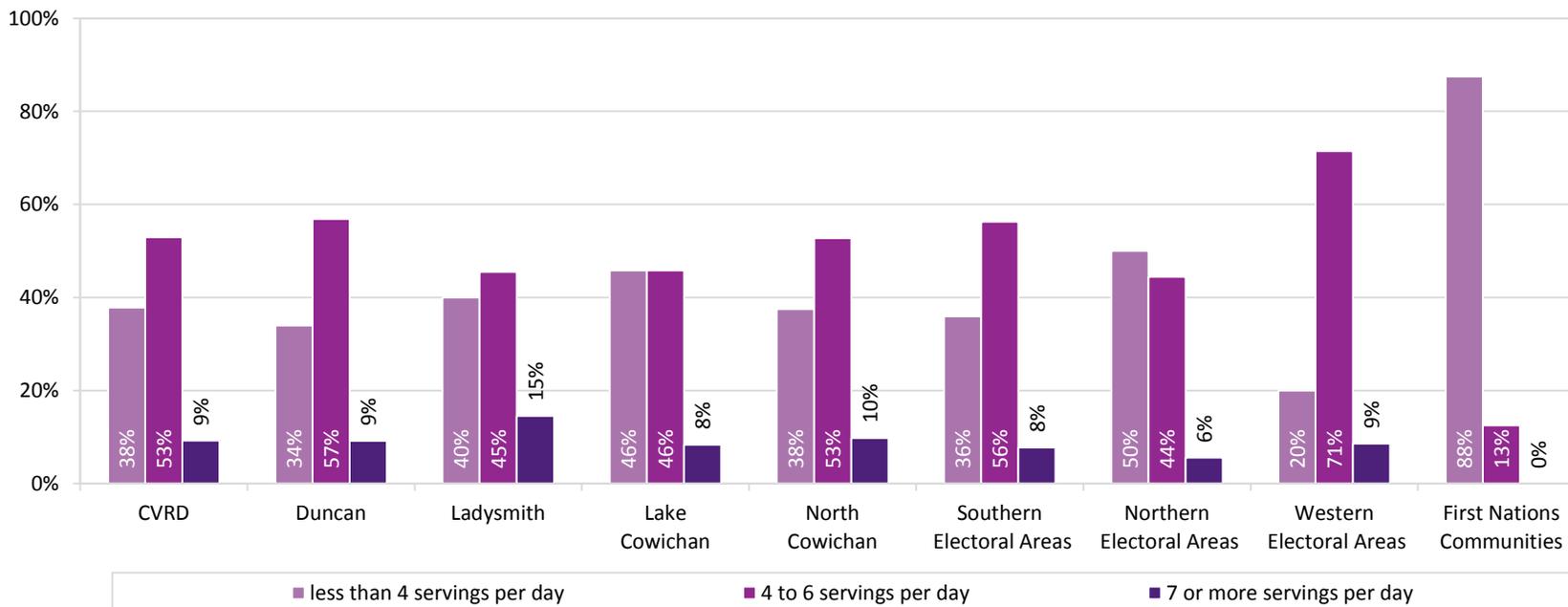
Note: See Data Sources section (page 8) for details on survey respondents.

Diet

Consuming fruits and vegetables can contribute to better health and reduce the risk of cardiovascular disease; people who consume seven or more servings of fruits and vegetables daily have the lowest risk of death (Oyebode et al., 2014). The Cowichan Community Health Survey asked respondents about their daily consumption of fruits and vegetables (616 survey responses). In total, 9% of survey respondents reported consuming seven or more servings of fruits and vegetables per

day. The majority of respondents (53%) consumed between four and six servings, and over one third of respondents (38%) consumed four servings or less per day. Over half of the respondents from the Northern Electoral Areas and First Nations communities consumed less than four servings per day although caution should be used when interpreting these results as the number of respondents from these communities was small.

Figure 70: Survey respondents' daily consumption of fruits and vegetables (2014)



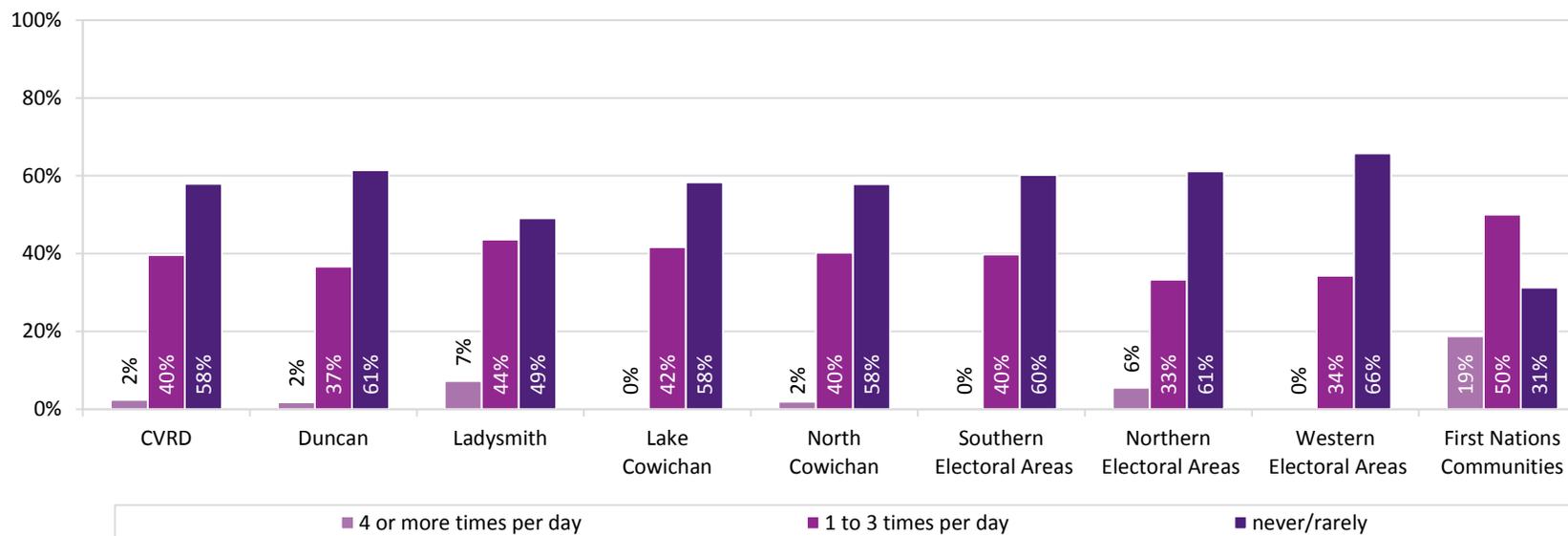
Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Unhealthy foods, such as saturated and trans fats, refined sugar, and excess salt can lead to numerous health problems. On average, Canadians eat twice as much salt as is needed which can lead to high blood pressure, stroke, heart and kidney disease (Health Canada, 2012a). Saturated and trans fats, found in margarine and some animal-based foods, can increase an individual’s risk of heart disease (Health Canada, 2012b). And studies suggest that consuming excessive amounts of added sugars can increase the risks of weight gain, obesity, type 2 diabetes, dyslipidemias, hypertension, cardiovascular disease and other diseases (Yang et al., 2014) and can contribute to tooth decay (Moynihan & Kelly, 2014).

Of the 616 people who responded in the Cowichan Community Health Survey to the question of daily consumption of unhealthy foods, the majority (58%) reported that they never (or very rarely) consumed unhealthy foods such as fruit juice, pop/soda or other sugary drinks, salty snacks, sugary snacks, and fast food. A large minority (40%) of respondents reported they consumed these foods 1 to 3 times per day and only 2% of respondents consumed these foods 4 or more times per day. The proportion of respondents who consumed unhealthy foods four or more times per day was high in First Nations communities although caution should be used when interpreting these results as the number of respondents from these communities was small.

Figure 71: Survey respondents' daily consumption of unhealthy foods (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

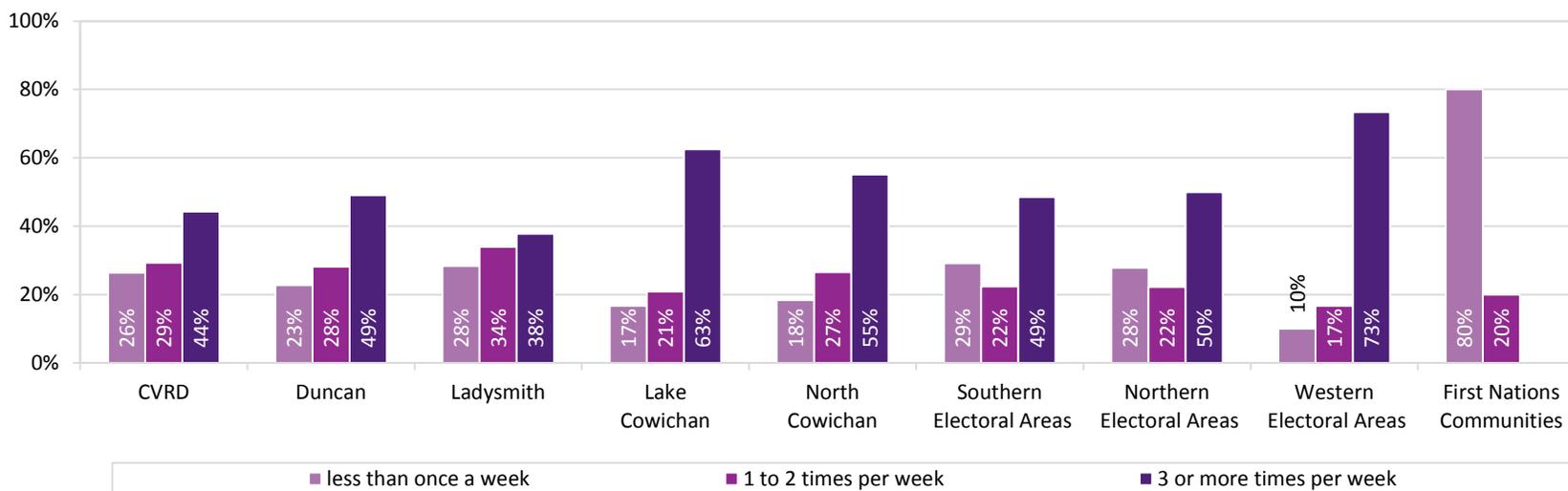
Physical Activity & Sedentary Behaviour

The Canadian Physical Activity Guidelines (CSEP, 2014), supported by the Public Health Agency of Canada (2011), recommend that adults (aged 18 to 64) get at least 150 minutes of moderate to vigorous activity per week to improve fitness, strength, and mental health, and to reduce the risk of numerous health issues such as obesity, high blood pressures, heart disease, stroke, type 2 diabetes, osteoporosis, and certain types of cancers. Only 5% of 5- to 17-year-olds in Canada meet the Canadian Physical Activity Guidelines for Children and Youth, which recommend at least 60 minutes of daily moderate- to vigorous-intensity physical activity (MVPA) ((2009-11 Canadian Health Measures Survey [CHMS]).

The Cowichan Community Health Survey asked respondents how many times they exercised in a typical week (535 survey responses). Less than half of respondents (44%) exercised three or more times per week. Approximately one quarter of respondents exercised less than once a week.

The results varied by community although it should be noted that certain communities, such as First Nations communities, Northern Electoral Areas, and Lake Cowichan, had limited survey respondents so results from these areas may be less representative.

Figure 72: Number of times survey respondents typically exercise per week (2014)



Source: Cowichan Community Health Survey, 2014.

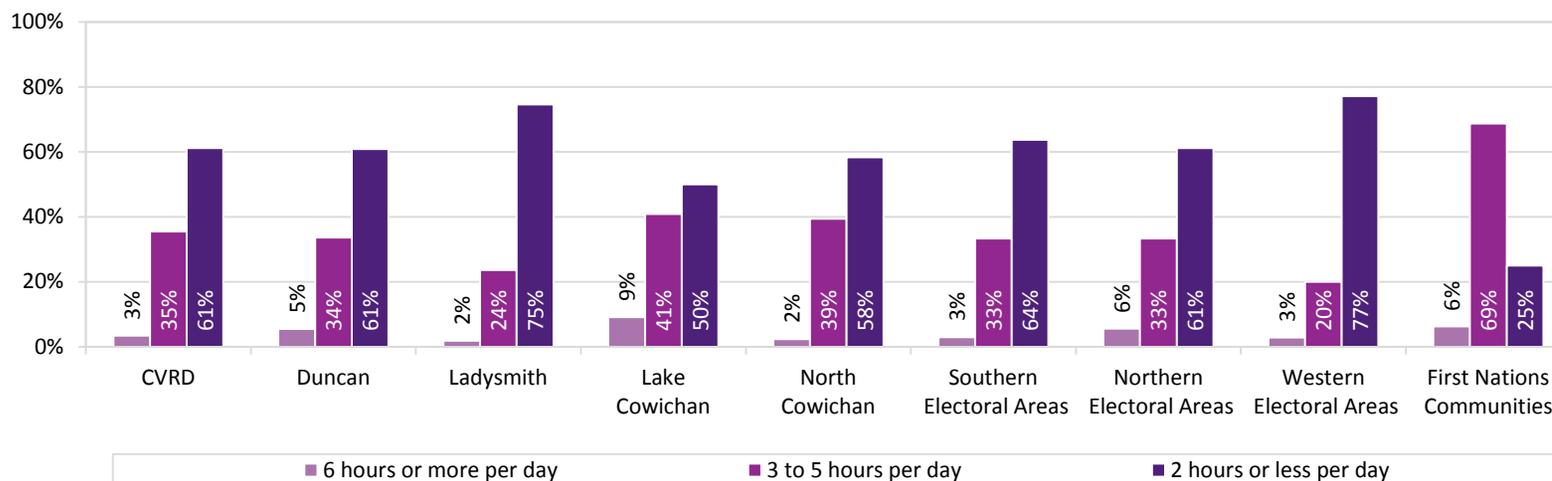
Note: See Data Sources section (page 8) for details on survey respondents.

Health professionals suggest that screen time (time spent in front of a computer or television screen) at home should be limited to less than two hours daily, and even less time can lead to additional health benefits (CSEP, 2014). Aside from eye strain, this is time that could otherwise be spent being physically active. Too much time spent sitting is linked to numerous health concerns such as obesity and metabolic syndrome, and according to a recent study may increase the risk of death from cancer and cardiovascular disease (Levine, 2014). In a 2007 study, close to three in 10 (29%) Canadian adults reported that they averaged 15 or more hours per week (over 2 hours per day) watching television, and 19% reported 21 or more hours per week (an average of at least 3 hours per day)(Statistics Canada, (CCHS), 2007).

The Cowichan Community Health Survey asked respondents how much time per day, outside of work or school, they spent in front of screens, including (watching television or videos, playing video games or on a computer or tablet (612 survey responses). The majority of respondents (61%) spend less than two hours per day at home in front of a screen. Just over one third of respondents spend three to five hours per day and a small percentage (3%), spend six hours or more per day in front of a screen. These results are skewed towards an older population and may not be representative of younger age cohorts.

Again, the results varied by community but it should be noted that certain communities, such as First Nations communities, Northern Electoral Areas, and Lake Cowichan, had limited survey respondents so results from these areas may be less representative.

Figure 73: Amount of time survey respondents typically spend in front of screens per day outside of work/school (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Alcohol & Tobacco Use

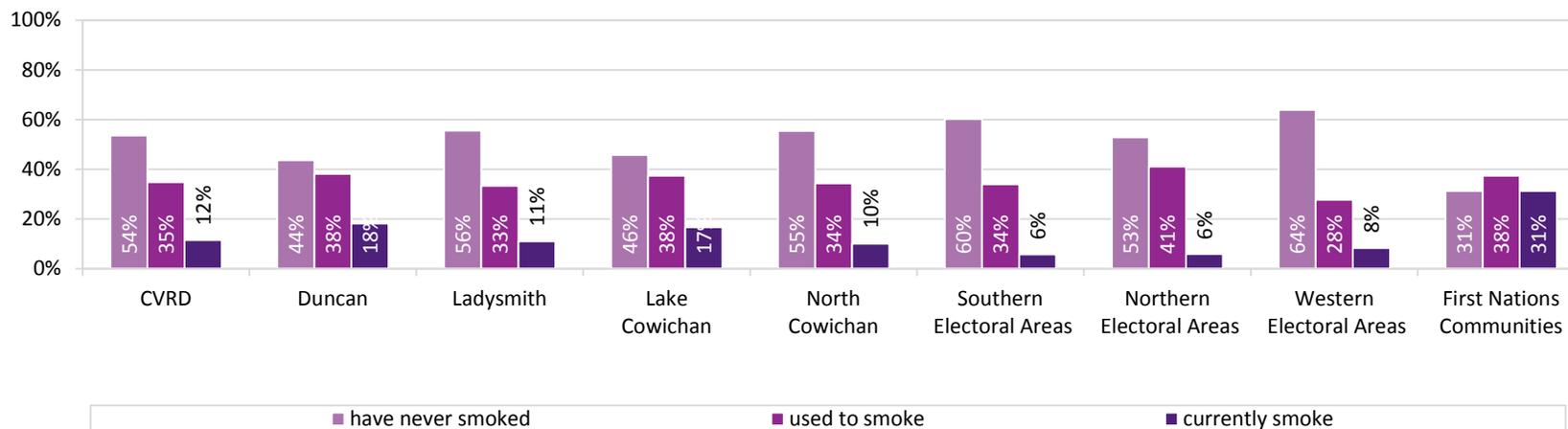
It is well documented that smoking tobacco is the leading preventable cause of premature death in Canada and is linked to many diseases such as cancer, cardiovascular disease, and lung disease (Canadian Cancer Society, 2014). Smoking during pregnancy can increase the risk of pregnancy complications for the mother and fetus such as low birth weight, still births, premature births, sudden infant death syndrome, and decreased fetal growth (Health Canada, 2007).

Alcohol is the second leading risk factor for premature death, disease, and disability in Canada and linked to many social and health issues including violence, injuries and trauma, cancers, fetal alcohol spectrum disorder, mental health issues, and chronic diseases such as liver cirrhosis, gastrointestinal and

cardiovascular diseases (Canadian Public Health Association, 2011). The combination of smoking and drinking is also more likely to increase cancers in the mouth or throat than either substance alone (Ibid).

The Cowichan Community Health Survey asked respondents about their current and past smoking habits (616 responses). The majority of respondents (89%) do not currently smoke and over half have never smoked. The results vary slightly by community although it should be noted that survey responses from First Nations communities, Lake Cowichan, and the Northern Electoral Areas were limited so the results are less representative for these areas.

Figure 74: Percentage of survey respondents who currently, used to, and have never smoked (2014)



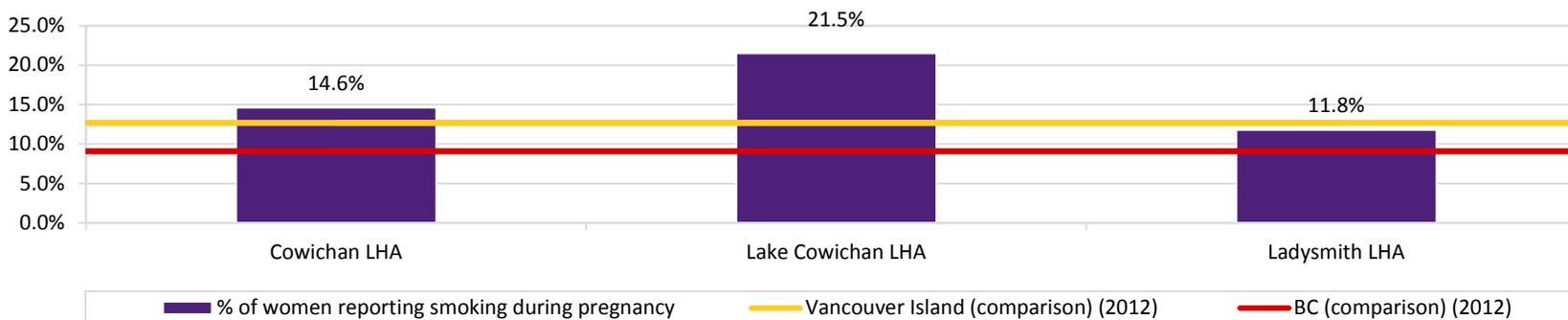
Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

The percentage of women who reported smoking during pregnancy was higher in CVRD areas than the province as a whole in 2012. The Ladysmith Local Health Area (LHA) was below the Vancouver Island

average of 12.7%. The Cowichan LHA exceeded it by almost two percentage points. The Lake Cowichan LHA exceeded the Vancouver Island average by close to nine percentage points.

Figure 75: Percentage of women who reported smoking during pregnancy (2012)

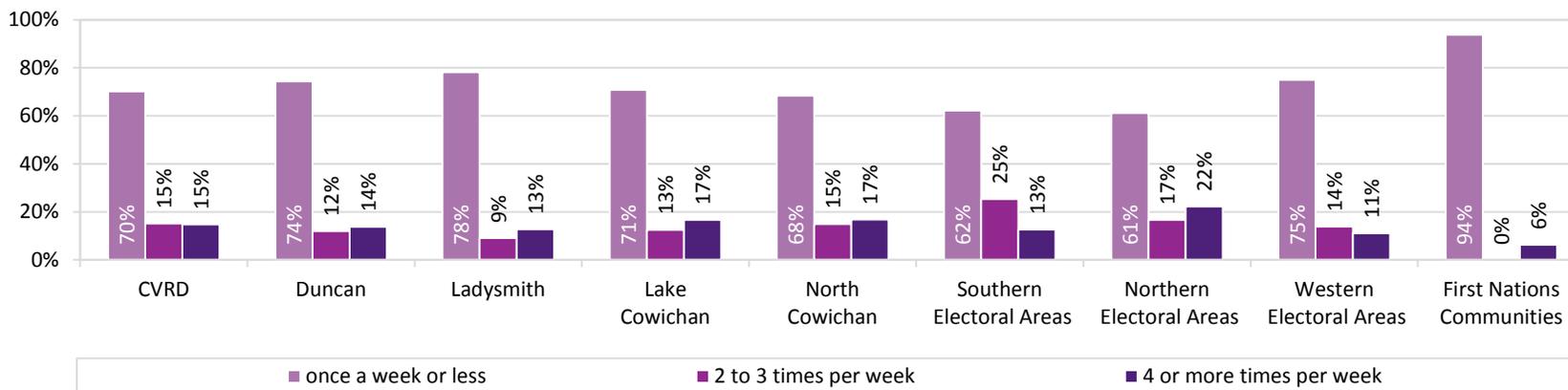


Source: Perinatal Services BC, 2008-2012.

The Cowichan Community Health Survey asked respondents how many times per week they consumed alcohol on average over the past 12 months (617 responses). The majority of respondents (70%) consumed alcohol once a week or less. The results varied slightly by community and it should be noted that survey responses from First Nations communities, Lake Cowichan, and the Northern Electoral Areas were limited so the results are less representative for these areas. While these patterns of alcohol consumption provide an overview of general

habits, they do not necessarily represent poor health practices. Canada’s Low-Risk Alcohol Drinking Guidelines recommend drinking no more than 10 drinks a week (maximum of two drinks a day) for women and 15 drinks a week (maximum three drinks a day) for men to reduce long-term health risks (Centre for Addictions and Mental Health, 2011). Therefore, alcohol sales per capita have also been measured for the CVRD to provide a fuller picture of alcohol consumption in the region.

Figure 76: Average number of times per week survey respondents consumed alcohol in the past 12 months (2014)



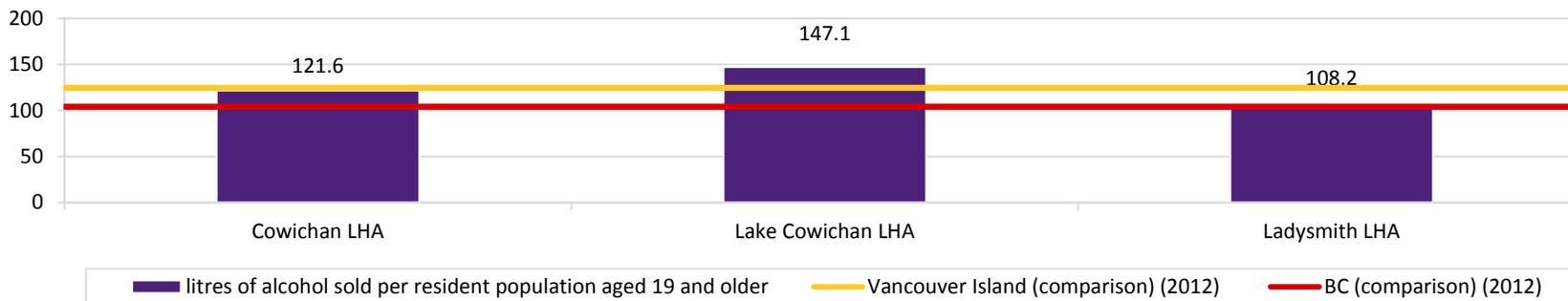
Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Alcohol sales per capita were higher in the CVRD than the province as a whole in 2012. The Cowichan and Ladysmith Local Health Area (LHA) sales per capita were higher than the provincial average (104.1 litres per adult resident per year) but

lower than the average for Vancouver Island (124.5 litres per adult resident per year). Sales in the Lake Cowichan LHA were 29% above the provincial average and 18% above the Vancouver Island average.

Figure 77: Alcohol sales per capita (litres of alcohol sold per resident population aged 19 and older) (2012)



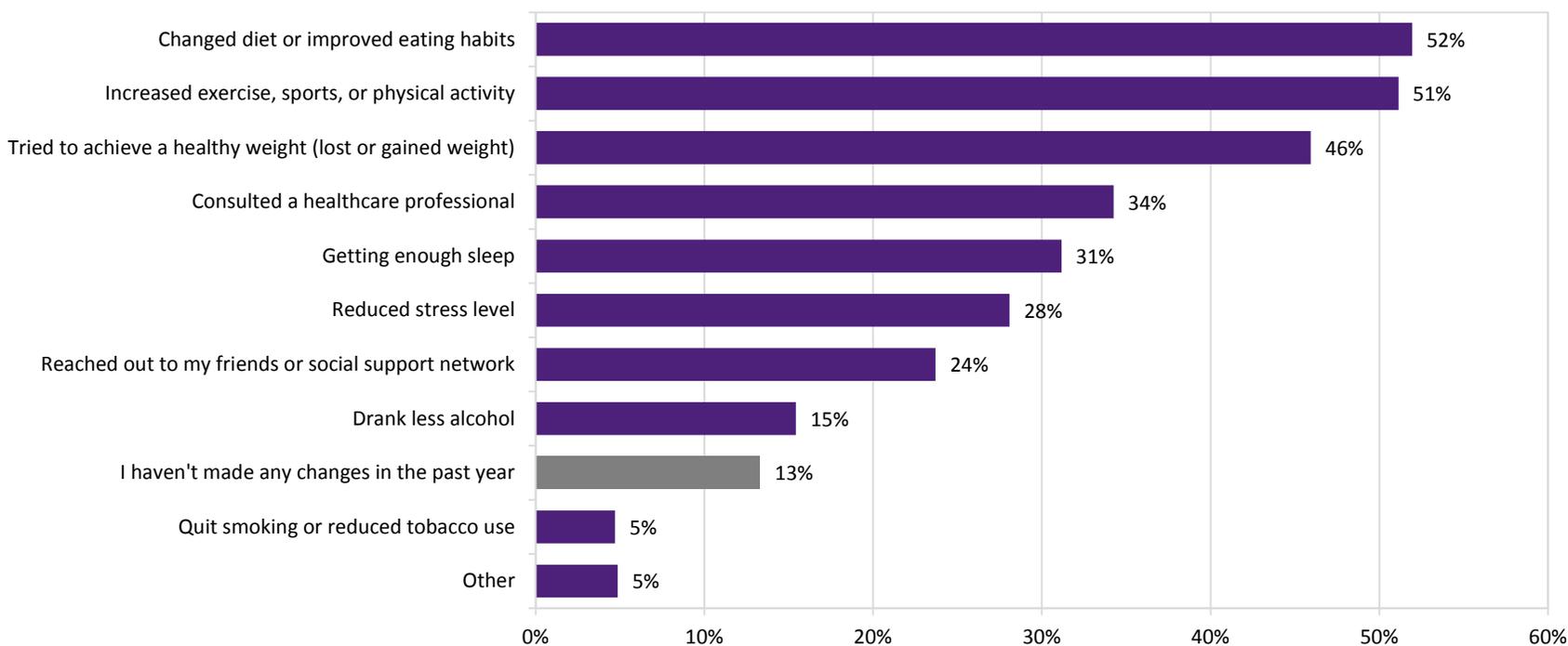
Source: Vancouver Island Health, 2012.

Effort to Improve Health and Well-being

The Cowichan Community Health Survey asked respondents if they had made any changes in the past year to improve their overall health and well-being. Over half of the 616 who responded changed their diet and increased exercise and close to half tried to achieve a healthier weight (by gaining or losing weight). Other efforts noted by survey respondents included

cultural and faith-based practices, alternative healthcare (natural medicines, naturopath), going back to school, adopting children, volunteering, retiring, consulting counsellors, seeking help for addictions, taking vitamins, and getting surgery or medical treatments. Only 13% of respondents did not make any change to improve their health or general well-being.

Figure 78: Percentage of survey respondents who made changes to improve their health and well-being in the past year (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.



Key Determinant 8: Healthy Childhood Development

Early childhood development is widely understood to be strong predictor of health outcomes in adulthood (Rioux & Hay, 1993). It is measured using the Early Development Instrument (EDI).

Key Findings:

- The Lake Cowichan LHA saw a dramatic worsening of over 30 percentage points in the EDI measurement between 2004 and 2013 in kindergarteners rated vulnerable in one or more categories (physical, social, emotional, language, and communication). By 2013/14, close to 50% of kindergarteners were identified as vulnerable in one or more categories by their teacher, 16 percentage points above the BC average.
- The Ladysmith LHA also performed poorly, and was nine percentage points above the BC average of children rated vulnerable in one or more categories.
- The Cowichan LHA has remained very close to the BC average over time, with vulnerability in one or more categories rising by four percentage points between 2004 and 2013 to 32%.

Table 20: Childhood Development Indicator Overview

Indicator Name	Description	Relevance to Health and Well-being
EDI overall vulnerability	<ul style="list-style-type: none"> ▪ The EDI is a tool created to assess key areas of early child development and vulnerability. Vulnerability is defined as “the portion of the population which, without additional support and care, may experience future challenges in school and society” (University of British Columbia n.d.). 	<ul style="list-style-type: none"> ▪ EDI vulnerability measurements are understood to be strong forecasters of social, health and education outcomes in adulthood (University of British Columbia, n.d.).



Early Development Instrument (EDI) Overall Vulnerability

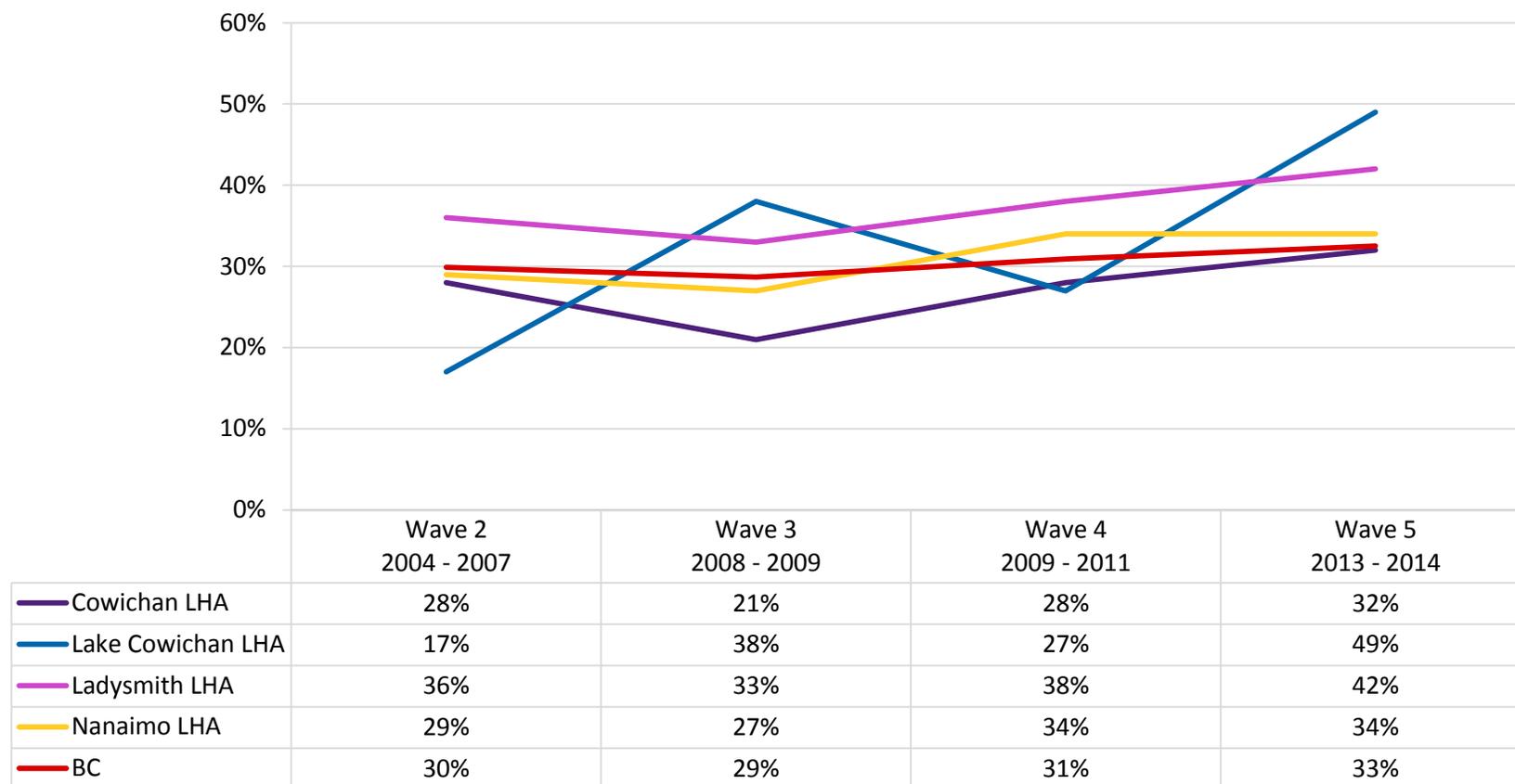
The EDI measures five core areas of early child development that are known to be good predictors of adult health, education and social outcomes: physical, social, emotional, language, and communication. The EDI questionnaire has over 100 questions and is completed by kindergarten teachers from across BC for all children in their classes. Results are collected in “waves,” containing data from numerous consecutive school years. This report uses EDI data from Wave 2 to Wave 5, covering the 2004 to 2013 academic years.

Data provided for the Cowichan LHA shows that vulnerability in one or more categories rose by four percentage points between 2004 and 2013 to 32%, which is very close to the BC trend.

In contrast, the Lake Cowichan LHA, which includes the communities of Lake Cowichan, Youbou, Mesachie Lake and Honeymoon Bay, saw a dramatic increase of over 30 percentage points in kindergarteners rated as vulnerable in one or more categories, reaching close to 50% by 2013/14. The community of Lake Cowichan fared even worse with 51% of kindergarteners rated vulnerable in at least one category, or 17 percentage points above the BC average. The Ladysmith LHA also performed poorly, and was 9 percentage points above the BC average (University of British Columbia, 2013).

Figure 79 on the following page presents population vulnerabilities identified in one or more categories by local health area.

Figure 79: Early Development Instrument Overall Vulnerability (2004 - 2013)



Source: University of British Columbia, 2013.



Key Determinant 9: Biology & Genetic Endowment

The basic biology of a person has fundamental impacts on their health. In some instances, the genetic make-up of a person can predispose them to various diseases and health problems (Public Health Agency of Canada, 2013). Some genes may directly cause a disease, whereas others may require health habits or social influences for the disease to develop (Blane, 1996).

In general, there are few diseases that develop from the inheritance of a single gene with no other contributing factors (Institute of Medicine, 2006). Such diseases would include sickle-cell anemia, Tay-Sachs disease and cystic fibrosis and are relatively uncommon in most populations. There are many other diseases that are known to be genetically linked including some cancers, diabetes, asthma, heart disease and Down syndrome. Development of these diseases may be as a result of the joint effects of many genes or a necessary

interaction of the gene(s) with the environment (Institute of Medicine, 2006). The genetics of an individual can also play a major role in their susceptibility to certain infectious diseases. Susceptibility to malaria, HIV/AIDS, tuberculosis and invasive pneumococcal disease, for example, are known to be genetically linked (Hill, 2006).

The biology of a person can also predispose them to weight gain, addiction to drugs, alcohol and other unhealthy attributes or behaviours. Understanding that these can all play a role in the health of an individual, genetics and basic biology are clearly important determinants of health. However, collecting information on the genetic make-up of Cowichan residents is beyond the scope of this report. Information on the current health status of residents is presented in the section on Health Status and includes some diseases that may have a genetic basis.



Key Determinant 10: Health Services

Access to health services contributes to the overall health of a population (Public Health Agency of Canada, 2013). These health services can range from access to preventative care such as population screening for illnesses or immunization to treatment for various conditions.

Providing health services for a community is only part of the picture. For health services to be effective, community members must be aware of them, able to reach them physically (or digitally), and able to afford them. While Canadians have the benefit of universal health care, not all individuals have access to services such as eye care, dentistry, mental health counselling, and prescription drugs.

Key Findings:

- The majority of survey respondents reported having a regular family doctor (96%). The proportion of respondents with a regular family doctor was higher in all CVRD communities than the province as a whole (86%).
- Over half of survey respondents (54%) reported using alternative or complementary health care such as acupuncture, chiropractor, naturopath, massage therapy, and physiotherapy.
- Most survey respondents (81%) had visited a dentist in the past year; however the 19% that didn't reported that cost was a significant factor that prevented them from receiving regular dental care, even if partial coverage was provided.
- Less than half (44%) of applicable survey respondents (females aged 18 and over) reported having a pap smear in the past year to test for cervical cancer and 43% of applicable survey respondents (females aged 35 and over) reported having a mammogram to test for breast cancer. Sixty percent of male respondents aged 50 and over reported having a prostate exam in the past year.
- The majority of survey respondents received health care from a doctor's office (with appointment). Other common forms of health care included walk-in clinics, alternative health care providers, and hospital emergency rooms. Community health centres, hospital outpatient clinics, and telephone consultations were not commonly utilized by survey respondents.
- The Ladysmith Local Health Area (LHA) had a significantly higher number of emergency room visits per 1,000 people compared to the other CVRD areas and Vancouver Island as a whole. Emergency visits in the Ladysmith LHA were highest in the 0 to 39 year old age ranges and the 80 and over age range.

Table 21: Health Services Indicator Overview

Indicator Name	Description	Relevance to Health and Well-being
Regular family doctor and complementary health care	<ul style="list-style-type: none"> The percentage of survey respondents who have access to a regular family doctor as well as the percentage who utilize complementary or alternative health care services. 	<ul style="list-style-type: none"> Physicians and other health-care providers have a role in detecting disease and treating it but also in promoting health and well-being of their clients (The College of Family Physicians of Canada, 2005).
Dental care	<ul style="list-style-type: none"> The percentage of survey respondents who visited a dentist in the past year. 	<ul style="list-style-type: none"> Oral health is important to your overall health. Cavities and gum disease may contribute to serious conditions like respiratory diseases and diabetes (Health Canada, 2009).
Regular check-ups	<ul style="list-style-type: none"> The percentage of (applicable) survey respondents who had a pap smear, mammogram, or prostate exam in the past year. 	<ul style="list-style-type: none"> Check-ups can help to find health problems before they start and screening tests, including pap smears, mammograms and prostate exams, provide a means of detecting disease before the onset of symptoms which can make the disease easier to treat (Centre for Disease Control and Prevention, 2014).
Health care services and utilization	<ul style="list-style-type: none"> Identifies where people in the Cowichan region generally go to access health services as well as the number of emergency room visits per 1,000 people. 	<ul style="list-style-type: none"> Understanding the types of health services that are utilized in the region can help to plan for future services to best suit the unique needs of Cowichan residents.

Regular Family Doctor and Complementary Health Care

The Cowichan Community Health Survey asked respondents if they had a regular family doctor. The vast majority of the 583 respondents (96%) had access to a regular medical doctor. The Cowichan Division of Family Practice’s survey data corroborate this information with the finding that 95% of Cowichan Region residents have a family doctor (Cowichan Valley Division of Family Practice, 2014). The percentage of respondents with a

regular family doctor was higher in all CVRD communities than the province as a whole (86%). It should be noted however, that the survey responses are not fully representative of all population groups. Just over half of the health survey respondents (581 responses) used alternative or complementary health care (e.g., acupuncturist, homeopath, chiropractor, etc.)

Figure 80: Percentage of survey respondents who have access to a regular family doctor (2014)

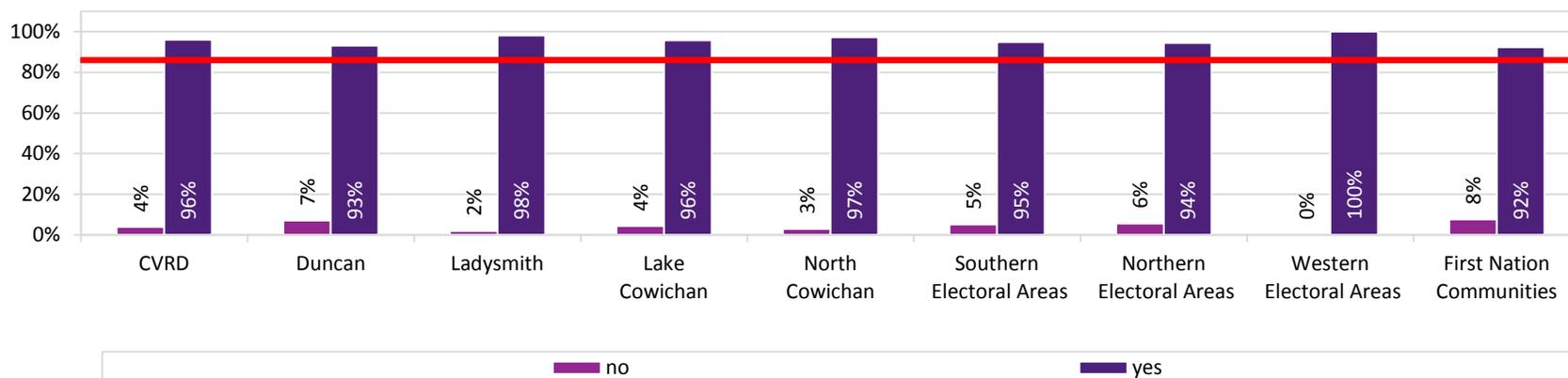
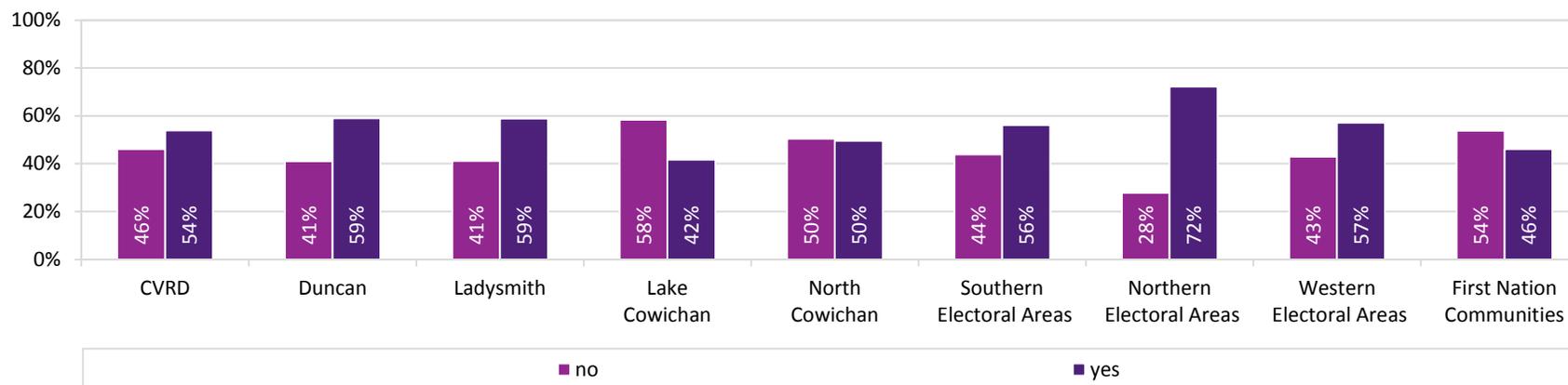


Figure 81: Percentage of survey respondents who utilize alternative or complementary healthcare (2014)



Source: Cowichan Community Health Survey, 2014; Statistics Canada, 2012c.

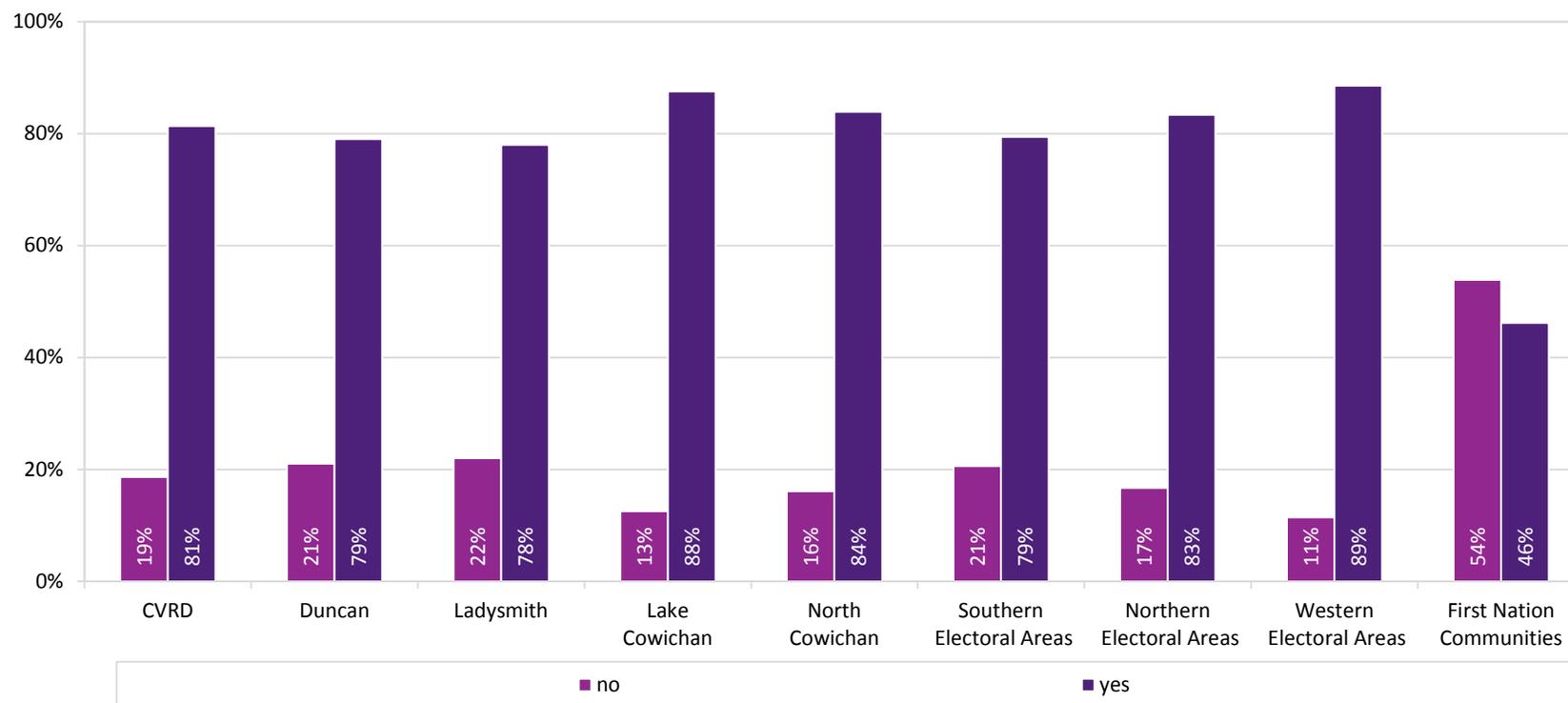
Note: See Data Sources section (page 8) for details on survey respondents.

Dental Care

The Cowichan Community Health Survey asked respondents if they had visited a dentist in the past 12 months (579 responses). The majority of respondents (81%) visited a dentist in the past year. The results vary by community although it should be noted that survey responses from First Nations communities, Lake Cowichan, and the Northern Electoral Areas were limited so the

results are less representative for these areas. The survey also asked why people had not seen a dentist in the past year. Numerous respondents commented that cost was a large factor, particularly for those with no coverage or partial coverage. Others reported they had no problems, wore dentures, didn't have enough time, or had anxiety or fear about dental work.

Figure 82: The percentage of survey respondents who have visited a dentist in the past year (2014)



Source: Cowichan Community Health Survey, 2014; Statistics Canada, 2012c.

Note: See Data Sources section (page 8) for details on survey respondents.

Regular Check-ups

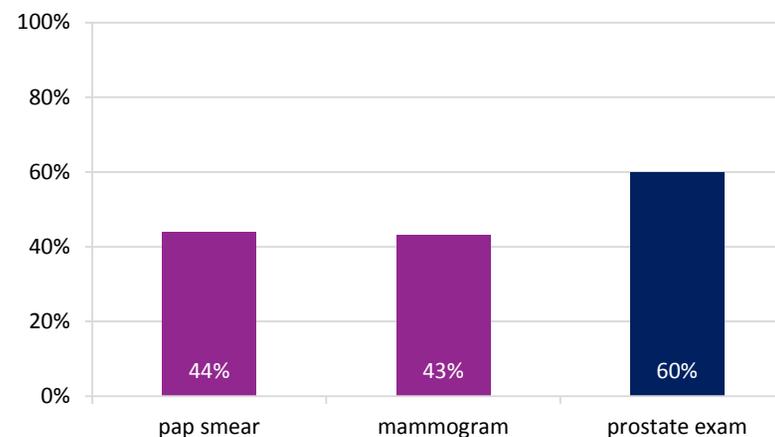
The Cowichan Community Health Survey asked applicable respondents if they had certain medical check-ups in the past 12 months. Figure 83 illustrates the percentage of respondents who saw a medical professional in the past year for one of the following check-ups; pap smears, mammogram, or prostate exam.

Medical organizations generally recommend women aged 21 and over should have routine pap tests to test for cervical cancer, human papillomavirus, and other abnormalities (BC Ministry of Health, 2009). Applicable respondents (528) for the pap smear question were considered to be females aged 18 and over. Less than half (44%) reported they had a pap smear in the past year. While pap smears are not necessarily recommended every year for certain groups (i.e., women with hysterectomies, women over 65 who have had routine testing in the past and are not at high risk of cervical cancer), this indicator can provide a general overview of women’s health in the region.

Medical organizations generally recommend women age 50 and older have routine mammograms to test for abnormalities and early breast cancer (BC Ministry of Health, 2009). Applicable respondents (473) for the mammogram question were considered to be females 35 and over. Less than half (43%) of the 473 survey respondents reported they had a mammogram in the past year.

Medical organizations generally recommend men aged 50 and over have routine medical exams. Applicable respondents (82 fit this category) for the prostate exam question were considered to be males aged 50 and over. Over half (60%) reported having a prostate exam in the past year.

Figure 83: Percentage of survey respondents who reported having a specific medical check-up in the past year (2014)



Source: Cowichan Community Health Survey, 2014; Statistics Canada, 2012c.

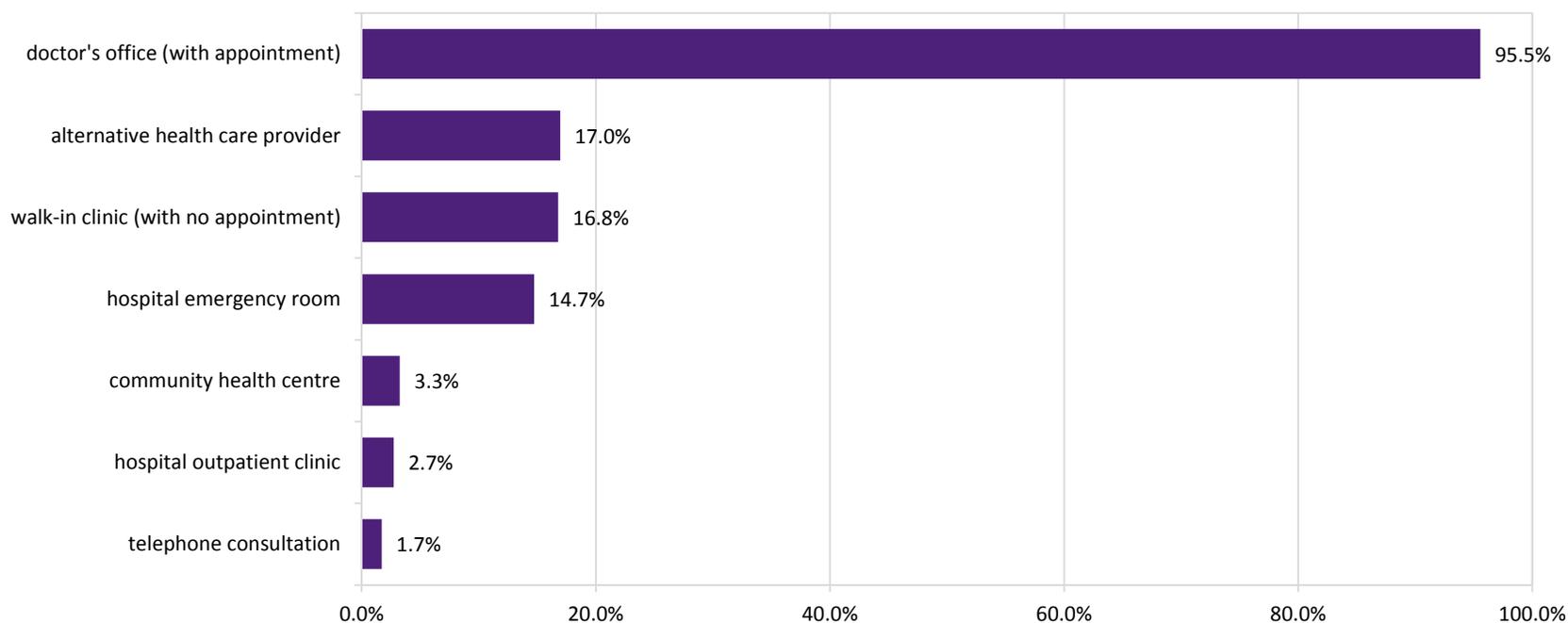
Note: See Data Sources section (page 8) for details on survey respondents.

Health Care Services and Utilization

The Cowichan Community Health Survey asked respondents (584 responses) where they generally went to receive the health care they needed. Respondents were asked to select all options that applied to them. The vast majority of respondents (95.5%) received health care from a doctor’s office with an appointment. Between 14 -17% of survey respondents utilized alternative

health care providers (such as chiropractor, physiotherapists, and massage therapists), walk in clinics, and hospital emergency rooms. Reported use of community health centres, hospital outpatient clinics and telephone consultations was relatively low.

Figure 84: Percentage of survey respondents who utilized certain types of health care services (2014)



Source: Cowichan Community Health Survey, 2014; Statistics Canada, 2012c.

Note: See Data Sources section (page 8) for details on survey respondents.

The number of emergency room visits per 1,000 people was highest in the Ladysmith Local Health Area (LHA) in 2012 than other CVRD areas. The Lake Cowichan and Cowichan LHAs were above the Vancouver Island average but well below the average for the Ladysmith LHA.

The Ladysmith LHA had higher proportions of emergency visits for every age group compared to the Vancouver Island average in 2012. The Cowichan LHA also had higher proportions of emergency visits for each age group although to a lesser degree than the Ladysmith LHA. And the Lake Cowichan LHA was similar to the Vancouver Island averages but had lower proportions of 10 to 19 year olds and individuals aged 70 and over admitted to the emergency room and higher proportions of 20 to 59 year olds.

Figure 85: Emergency room visits per 1,000 people (2012)

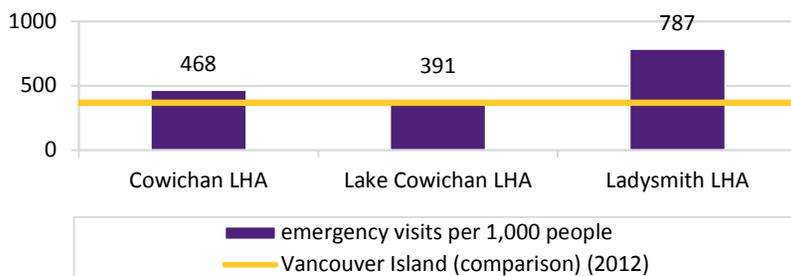
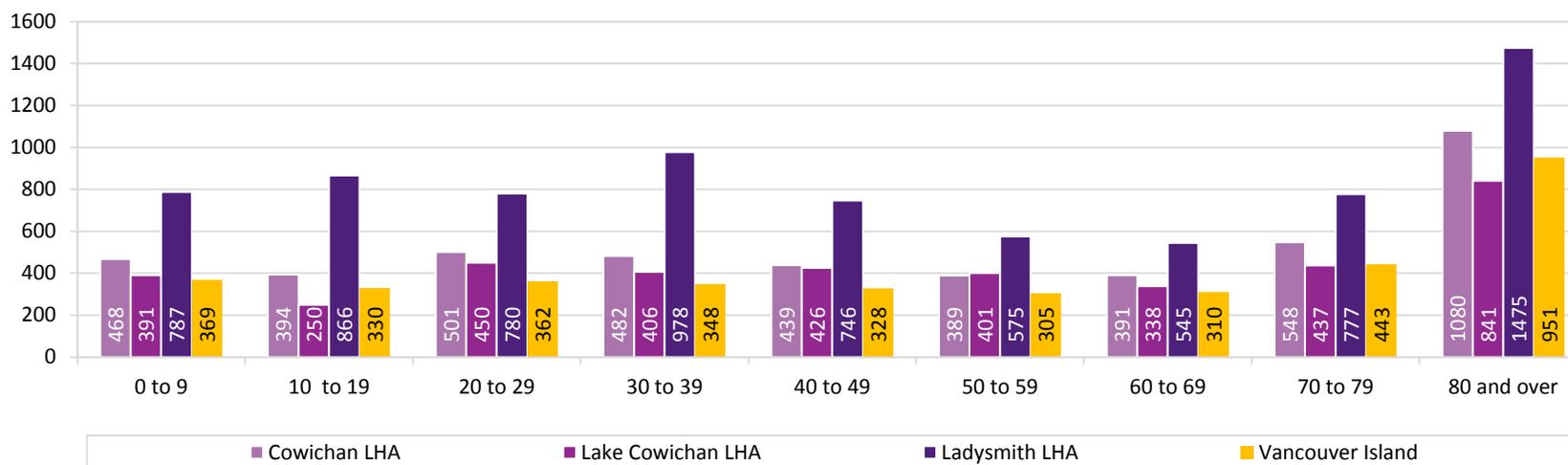


Figure 86: Number of emergency room visits per 1,000 people by age range (2012)



Source: Vancouver Island Health Authority, 2012.



Key Determinant 11: Gender

Many health issues are known to be a function of gender-based social status (Public Health Agency of Canada, 2013). Gender is composed of many different facets including behaviors, biology, hormonal attributes, social roles, attitudes and physical attributes and cannot simply be defined by a person's sex (Davidson, 2006).

Gender can have a direct effect on health through biological differences between different sexes which is discussed further in the “biology and genetic endowment” determinant. However, gender can also have an indirect effect on health and well-being as a result of differences in social constructs. That is, the relative values, power, and influence that society defines for different genders.

In Canada and within the Cowichan communities, gender plays a role in employment outcomes for an individual. As illustrated in Figure 87, women in the CVRD are less likely to be employed than men and are less likely to hold full-time jobs than men.

Additionally, differences in wages as a result of gender are still apparent. As discussed previously, income is known to be related to health and thus reduced wages and opportunities to work would put women at a disadvantage in terms of health and well-being as compared to men.

On the other hand, women are known to live longer than men; life expectancy for males in BC is 80 years versus 84 years for females (Statistics Canada, 2012d), and women experience lower levels of cardiovascular disease and many cancers (de Kretser, 2010).

Gender can also influence health behaviors and men in particular exhibit differences in how they seek out help, how they communicate their health needs and how they access the services that are available (Lutfiyya, 2014). It has been documented that men are less likely to admit to and seek help for a problem and they underutilize available and accessible health care (Ibid). This issue was also raised by workshop participants who noted that many men face greater challenges in overcoming shame and emotional pain associated with poor mental or physical well-being, as well as issues of family or community well-being, due to social and cultural expectations.

Although Statistics Canada only presents data for males and females, it is recognized that other genders require due consideration in planning and policy creation. Transgender and gender variant persons have been shown to experience adverse health outcomes that are unlikely to be as a result of biology or genetics and are more likely as a result of gender discrimination (Scout, 2005). They are likely to face unique challenges when seeking health care, employment and support from social systems (Lombardi, 2001; Scout, 2005).

Regardless of the way a person self represents (man, woman, transgender or otherwise), the social and cultural influences on this representation has an effect on their health (Lutfiyya 2014). Aside from the biological differences, people of different genders grow up differently and experience life differently. As such, gender appropriate care policies need to be considered to address these differences and move towards better health and well-being for all Cowichan community residents.

Figure 87: CVRD Female versus Male Employment and Income Characteristics (2011)



Source: Statistics Canada, 2013a.



Key Determinant 12: Culture

Culture shapes who we are and how we live and therefore influences our health and well-being (Public Health Agency of Canada, 2013). Characterization of culture is difficult to describe but it includes things like shared language, beliefs and practices (Healey, 2008).

There are various ways that a person's culture can influence their health. For example, when culture is passed down between generations, it has been shown to have a protective effect on suicide rates in First Nations communities (Chandler, 1998).

Key Findings:

- Numerous successful cultural events, such as drumming, canoe races, educational village workshops, Walk of the Nations, and the Aboriginal Film Festival, take place around the region to celebrate and share First Nations culture and traditions.
- Social Planning Cowichan has recently launched the “Creating Cross Cultural Connections” program designed to teach the community about First Nations history and look at ways to move forward together with a stronger understanding of cultural differences.
- The Hul’qumi’num Health Hub developed an educational video for health professionals to learn how to honour cultural traditions within the current healthcare system.
- Schools throughout the District, including Vancouver Island University, provide traditional language classes and Aboriginal support workers.
- Funding is provided for Elders to visit daycares throughout the region with high proportions of Aboriginal children.
- “Success by 6” distributes CDs with traditional Hul’qumi’num songs to families and new mothers throughout the region.
- Chemainus High School students translated popular Robert Munsch children’s stories into Hul’qumi’num to help kids in the region learn the traditional language.
- Approximately half of survey respondents (49%) had some participation in the collection of their own food (grow, hunt, gather). Common reasons for those who didn’t collect their own food included a lack of time, access, or interest. Other reasons included a lack of knowledge, lack of space/sun to garden, limited physical ability, and convenience of purchasing food from grocery stores or farmers markets.
- The region enjoys and supports a vibrant arts scene with many artists, artisans, music festivals, and theatre.

Cultural Competency

Cultural competency is a process of ongoing self-reflection, with the ability to recognize one’s own cultural beliefs and assumptions so that one can attempt to break through common stereotypes or commonly held assumptions of other cultures (Minkler, 2012). It is essential that health practitioners, educators and policy makers, in particular, understand the importance of cultural competence to their professions. Misunderstandings about culture can have a negative impact on a person’s health.

Within the health system, for example, if a physician does not practice cultural competence, it can result in patients being marginalized within the health system, putting them at greater risk and ultimately resulting in poorer health outcomes (Knibb-Lamouche, 2012). Some cultural groups may face greater challenges in accessing health care and education due to various barriers including stigmatization, stereotyping, or a lack of appropriate services (Public Health Agency of Canada, 2013). In the CVRD, the Hul’qumi’num Health Hub created an educational video for health professionals to learn about cultural sensitivities and to help improve healthcare for First Nations in the future; particularly how to honor cultural end of life traditions within our current healthcare system.

Social Planning Cowichan has recently launched a new program entitled “Creating Cross Cultural Connections” which are a series of workshops designed to teach the community about the history of First Nations in BC and to move forward in building a community that is strong and knowledgeable about cultural differences. This program is an excellent starting point for people to begin to understand why and how people differ within the community and how different people can be best supported.

The Cowichan Intercultural Society serves to facilitate mutual respect, trust, and support among all the different cultures represented in the Cowichan region. They provide English as a Second Language (ESL) classes, tutoring, settlement services, youth activities, and newcomer’s support groups.

Arts and Culture

The region enjoys a strong arts and “culture” environment with music and film festivals, a thriving arts and artisan scene with many featured in galleries and at farmers’ markets. The Cowichan Valley Arts Council is to encourage and foster appreciation of the broad spectrum of arts and culture in the Cowichan Valley Region (CVRD), by serving artists and residents through advocacy, by building connections and partnerships and by enhancing both exposure to and participation in arts and culture.

Cultural diversity and sharing of cultures through community events and celebrations is common. An example is the Cowichan Aboriginal annual film festival. Efforts are made by local organizations to include traditional First Nations language and culture in schools.

Local food and agriculture is promoted through farmers’ markets, local food production and purchasing, educational programs and organizational support and advocacy s (e.g., Cowichan Green Community). A growing winery industry further enhances this culture of food.

Traditional Aboriginal Language and Culture

Communities within the Cowichan region are making strides to increase First Nations access to culture. Numerous cultural events have also been executed throughout the region with a great deal

of success including drumming, canoe races, educational village workshops, walk of the Nations and the Aboriginal Film Festival.

Participants from community workshops also identified a number of programs which are contributing to increasing cultural ties for some First Nations in the region, such as:

- Funding for schools in District 79 to provide language classes.
- Funding to allow Elders to visit daycares which care for a large proportion of First Nations children.
- Chemainus High School students (with support from Elders) translated popular Robert Munsch children's stories into Hul'qumi'num language to help teach children in the region their traditional language.
- Lelum'uy'lh Child development centre offers infant and toddler care, pre-school and special needs care and incorporates Cowichan teachings into art, music and storytelling in both English and Hul'qumi'num.
- Production and distribution of CDs with Hul'qumi'num songs.
- Inclusion of cultural content in the local "Cowichan Kids" magazine.

In addition to these initiatives, workshop attendees also discussed some of the ways in which traditional language and culture are being taught in schools around the Duncan area. The Quw'utsun Smuneem (Cowichan Children) Elementary School teaches 112 kindergarten through grade 4 students and incorporates Cowichan teachings and the Hul'qumi'num language into the curriculum (Cowichan Tribes, 2013). Vancouver Island University maintains Elders on staff for their students and offers traditional language courses. In addition, all schools in the District offer (voluntary) traditional language classes and Aboriginal support workers.

It was recognized through interviews conducted with Cowichan Tribes members, that language is essential to culture as many lessons are not passed down accurately because of the translational issues. Although language classes are offered through both the Band Office and the elementary schools, there are still few people that can speak Hul'qumi'num fluently, the predominant Aboriginal language of the Cowichan Valley.

The Tetla economy is another example of how one Nation in the Cowichan area is working to enhance and embrace their culture and health. Tetlas are gift certificates that are issued by the Tetla Tsetswatil as a means of embracing traditional ways of economic activities by creating a system of barter and trade (Tetla, 2014). This system has the capacity to increase an individual or families access to essential services and products.

Traditional Food Sources

Traditional foods are essential to the health of First Nation peoples in the Cowichan region. Food preference forms an important part of cultural heritage (Lambden, 2007) and access to such foods is a necessary component for food security in some First Nations communities (Socha, 2013).

One interviewee stated the following when asked about the importance of traditional food sources to the health of their community:

"Hugely connected (to health) because it's part of simplifying life. Processed foods are not serving us well; we are looking at ways to simplify life".

Key informant interviews that were conducted as part of this project suggest that where possible, traditional resources are harvested and consumed by some First Nation groups. These include fish, salmon, crab, clams, octopus, herring eggs and

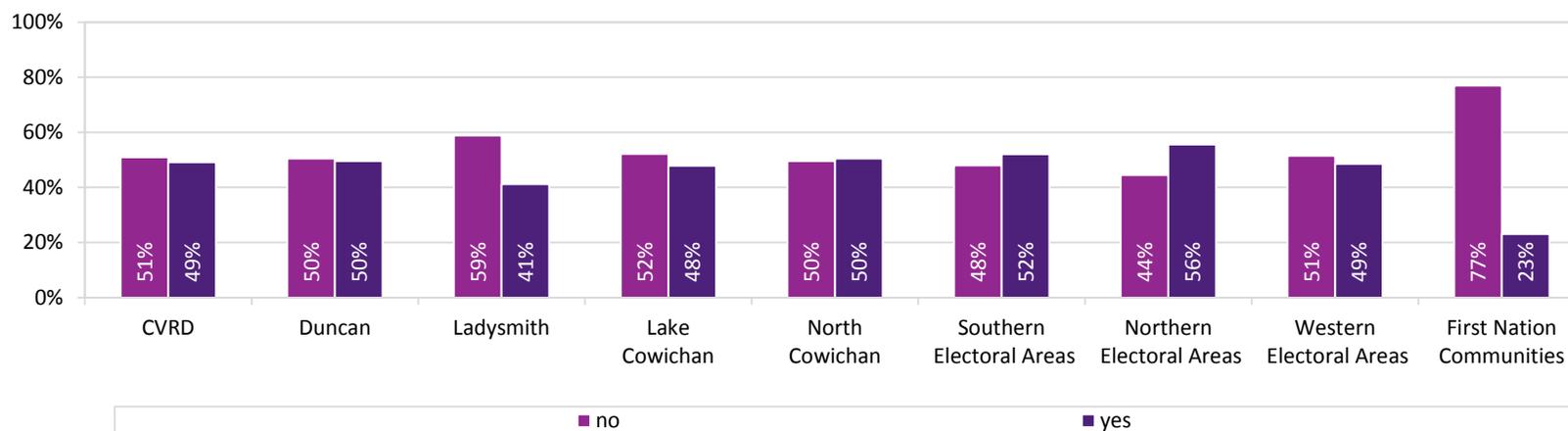
blackberries; however, it was also noted that harvesting is occurring infrequently and traditional food sources are not the main source of food for most families. Some of the factors stopping people from consuming traditional food included environmental contamination, lack of easy access and a disconnection from such food sources having grown up without them.

In an effort to increase access to traditional food sources the Cowichan Tribes have an Elder’s kitchen that serves daily lunches that incorporate traditional foods. These lunches are available daily to Elders and twice a week to the broader community.

Additionally, the Tetla project, which is intended to promote and empower Coast Salish people to undertake traditional economic activities such as barter and trade, could be an excellent way to promote and provide traditional food sources to those involved.

The Cowichan Community Health Survey asked respondents if they grew, hunted, or gathered their own food. Approximately half of the 581 respondents (49%) had some participation in the collection or growing of their own food. The results vary slightly by community although caution should be used when interpreting these results as the number of that survey responses from First Nations communities, Lake Cowichan, and the Northern Electoral Areas were small. For those who did not participate in their own food collection they commented that they didn’t have time or proper access to collect their own food or were not interested. Other reasons included a lack of knowledge, lack of space, adequate sun in the garden, limited physical ability, and convenience of purchasing food from grocery stores or farmers markets.

Figure 88: Percentage of survey respondents who grow, hunt, or gather their own food (2014)



Source: Cowichan Community Health Survey, 2014.

Note: See Data Sources section (page 8) for details on survey respondents.

Observations & Conclusions

Current Strengths & Areas for Improvement

The following list of strengths for the Cowichan region was identified through the five community workshops held in various locations throughout the region. This list is by no means exhaustive but provides a general overview of our strengths as a community with regards to health and well-being.

Strengths

Environmental Attributes

- **Abundant natural beauty** and opportunities for outdoor enjoyment.
- **Environmental stewardship:** residents respect and appreciate nature and seek to protect it.

Economic Attributes:

- **Seasonal tourism:** during summer months boosts local economies.

Social Attributes

- **Strong volunteer, non-profit, and grass roots sectors:** the ability of individuals and groups to network and collaborate to get things done in the community.
- **Strong sense of community:** the dedication of individuals who go above and beyond to help their neighbours and fellow citizens.
- **Welcoming atmosphere:** whether it's a friendly "hello" on the street or a welcoming attitude towards new residents, residents from across the region generally felt their communities were open and inviting.

- **Community and health services working together:** Cowichan Communities Health Network, Social Planning Cowichan, churches, and many other local organizations work together to achieve greater results.
- **Outdoor recreation and organized sports:** many programs, particularly for youth but also for adults.
- **Arts and culture:**
 - Music and film festivals
 - Local artists and artisans featured in galleries and at farmers' markets
 - Cultural diversity and sharing of cultures through community events and celebrations
 - Efforts by local organizations to include traditional First Nations language and culture in schools
- **Local food and agriculture:** farmers' markets, local food production and purchasing, educational programs and organizations (i.e., Cowichan Green Community).
- **Early childhood development organizations:** "Success by 6," Children's Play & Discovery Centre, Lelum'uy'lh Child Development Centre and many other local organizations and resources.
- **Culture:** cultural resources are available in many communities. A clear understanding of its importance to the overall health of a community has led to language programs, access to Elders for children, a shared economy which is not linked to Canadian banking systems and many other programs and initiatives designed to teach both First Nations and non-First Nation peoples about the culture of Nations in the Cowichan region.

Areas for Improvement

The following areas for improvement for the Cowichan region were identified through the five community workshops held in various locations throughout the region. This list is by no means exhaustive but provides a general overview of the areas that we need to work on as a community with regards to health and well-being.

Health and Well-being Issues:

- **Inequality and lack of employment:**
 - In many areas of the region, there is growing income inequality as people find it harder and harder to find steady full time jobs. (Note: Census data show that the majority of census tracts have lower income inequality than the provincial average) For example, many positions that are available are part-time casual or seasonal positions that don't allow employees to earn a living wage¹³, obtain benefit (e.g. dental insurance), or gain the experience they need to find more meaningful work.
 - The lack of adequate local employment (particularly for youth and young adults) leads to many young adults leaving the community to work out of town or in Alberta which divides families and impacts the local economy and sense of community.
- **Lack of entertainment opportunities:** while there are some great entertainment venues and events in certain

¹³ A living wage is the hourly amount a family needs to cover basic expenses such as: food, clothing, shelter, and transportation. Calculations are based on a two-parent family with two children with both parents working full-time. It does not include additional expenses such as: credit card loans, savings for retirement or children's education, owning a home, anything beyond minimal recreation, entertainment and/or holiday costs, costs of caring for a family member or savings for emergencies (Living Wage for Families Campaign, n.d.).

communities, smaller communities tend to have a lack of entertainment and social venues (such as restaurants, pubs, movie theatres, billiards, etc.).

- **Lack of social opportunities:** Many smaller communities have shorter business hours so there are fewer opportunities for people to 'bump' into their neighbours informally, particularly for those who commute outside of their community and return in the evening.
- **Significant service gaps in hospice care:** there are only three end-of-life beds to serve the entire region.
- **Environmental issues:**
 - Perception of water quality of the harbour in Ladysmith.
 - Perception of groundwater quality issues in South Cowichan communities related to storage of contaminated soils and pollution from industry, agriculture, highway traffic, and septic systems.
 - Lack of awareness of environmental issues in many communities and a lack of knowledge about where to find information or who to contact when problems arise.
- **Transportation issues:**
 - Lack of mobility for individuals without vehicles: communities and amenities (including health services) are quite spread out and transit, walking, and cycling options are limited for many communities.
 - Safety is a big concern in many communities along the highway as traffic speeds, aggressive drivers, and a lack of lighting can make the roads unsafe for pedestrians, cyclists, and drivers.

- **Lack of support for at-risk citizens:** while there are many dedicated organizations working hard to provide services for at-risk groups such as youth, seniors, lower income and homeless individuals, isolated rural residents, and people with mental illness and/or physical disabilities, there is a need for greater support for these marginalized groups who face greater challenges when it comes to health and well-being.
- **Cultural issues:** A lack of traditional food availability for First Nations poses risks to food security and cultural health. In addition, language classes in schools are only available for the first few years of schooling and most First Nations are not fluent in their native language.

Resource Issues:

- **Lack of resources for youth (ages 15-19):**
 - While some communities have good sports facilities for youth, there is a general lack of entertainment and activities for youth in many communities.
 - There is also a lack of employment and training opportunities in many communities which results in fewer youth who stay in their communities as young adults and fewer young families in the region.

- There are an insufficient number of full-time job opportunities for youth.
- **Lack of funding and support for volunteers:**
 - While the region has a strong volunteer sector, these hard working individuals and groups can face burnout.
 - There is a lack of resources and sustainable funding for non-profit organizations across the region; sometimes organizations are forced to compete for available funding which can result in conflict and redundancy as organizations are discouraged from working together to achieve similar goals.
 - While volunteer and non-profit sector collaboration and networking is one of the region's greatest strengths, there is a lack of overall coordination and communication among the organizations trying to create change in the region.
- **Lack of communication and awareness of resources:** while there are many great resources related to health and well-being in the region, not all citizens have a good understanding of what is available and where to find information.

Hot Topics

Hot topics are organized by vulnerable populations, physical activity, health services, physical environment, communities, and culture. The hot topics were identified on the basis of any one or combination of the following: 1) the prominence of the topic in the overall findings; 2) the extent to which the topic is worse than the provincial or Island Health average; 3) the identification of the topic in workshops and key informant interviews; and 4) the extent to which they link across determinants (see following section entitled “Highlighted Links and Relationships between Determinants”).

Health Status

The rate of teen mothers, preterm births and low birth weight babies, and the proportion of women who report smoking during their current pregnancy (with the exception of the Ladysmith LHA) are all higher than Island Health region as a whole. The rates of child hospitalization for injury and poisonings are higher in the Cowichan and Lake Cowichan LHAs compared to Island Health. Alcohol-related hospitalizations rates are higher than Island Health. Alcohol-related mortality in Cowichan Valley is similar to Island Health, but both are significantly higher than the provincial rate. In the Cowichan LHA, suicide and alcohol-related deaths are the only two causes of death that are significantly higher than expected when comparing to BC. The Ladysmith LHA has a higher than expected number of deaths from several causes, including circulatory system, alcohol, tobacco, cancer, heart disease.

Key Health Determinants

1. Income and Social Status

Income inequality increased substantially in the City of Duncan, Town of Lake Cowichan and the Northern Electoral Areas. First

Nations economic diversity is declining. The City of Duncan has the highest proportion of households who spend 30% or more of their income on shelter.

2. Social Support Networks

The City of Duncan has the highest proportion of seniors living alone, above the provincial average. The City of Duncan and First Nations communities had the highest proportions of single mothers in the region. First Nations communities in the CVRD had the highest proportion of single fathers, above the provincial average.

3. Education and Literacy

Nanaimo Ladysmith School District high school graduation rates remain little changed since 2008. Although the rate is improving, many of the Aboriginal population are without a diploma.

4. Employment and Working Conditions

The CVRD has a low labour force replacement ratio. Many youth are leaving for jobs outside of the region.

5. Social Environments

The region’s first homelessness survey identified a number of individuals facing absolute homelessness, a larger population fitting the definition of living in “precarious housing,” and identified a need for more culturally appropriate housing.

The number of senior residential care spaces in the CVRD is disproportionately small and there are a sizable number of seniors waiting for placement at any given time.

Reported incidents of violence against women in the Cowichan Valley are twice the provincial average.

The proportion of children in need of protection is significantly higher in the Cowichan Local Health Area (LHA) than the provincial and Vancouver Island average. The Cowichan and Ladysmith LHAs had over twice as many children in care than the provincial rate.

The low density sprawling character and automobile dependency of the CVRD contributes to social isolation and limited access to services for many.

6. Physical Environments

Settlement patterns in the region are primarily low density with a limited number of areas with sufficiently high densities and land use mixes to support and encourage active forms of transportation such as walking and cycling. Close to half of survey respondents reported there were no safe and accessible pedestrian routes in their community and over half of respondents reported there were no safe and accessible bike lanes or routes. The majority of daily commuters in the CVRD drive vehicles alone to work. Of the respondents who take transit, only a small minority have access to convenient transit services and routes that get them where they need to go in a reasonable time frame. A minority of respondents reported that bike lanes or routes were available in their community but they were either unsafe or inaccessible.

Air and water quality are important environmental concerns. Survey respondents identified poor air quality due to backyard burning, chimney smoke, vehicle exhaust, air pollution from industry, and dust. Groundwater quality is compromised by manure run-off and polluting contaminants. A sizable number of respondents from the City of Duncan, the Electoral Areas, and First Nations communities reported that tap water was not safe to drink. Most of the wells located in First Nations communities have boil water advisories.

The proportion of respondents who did not feel safe in their communities was highest in First Nations communities (although it is important to note that there were a limited number of respondents from these communities so the results are less representative). The City of Duncan has the highest number of property and violent crimes per 1,000 people. Serious juvenile crime rates in the Cowichan and Lake Cowichan Local Health Areas (LHAs) were above the provincial average.

The proportion of housing in need of major repair is significantly higher in First Nations communities, where the majority of housing was constructed after 1981.

7. Personal Health & Coping Skills

Less than half of respondents are exercising sufficiently. Alcohol sales in the Lake Cowichan LHA exceed the Vancouver Island and provincial average by a substantial margin.

8. Healthy Childhood Development

The Lake Cowichan LHA saw a dramatic decline in the EDI measurement in recent years, with 51% of kindergarteners rated vulnerable in one or more categories (physical, social, emotional, language, and communication), placing it well above the BC average of 34%.

9. Biology & Genetic Endowment

No relevant issues for this project.

10. Health Services

Less than half of applicable survey respondents are getting recommended regular check-ups for pap smears and mammograms in the past year. The Ladysmith LHA had higher proportions of emergency visits per 1,000 for every age group.

compared to the Vancouver Island average. The region has only three end-of-life beds available.

11. Gender

It is noted that women's median income earnings are lower than men's, a trend that is similar to provincial and national norms.

12. Culture

The aboriginal population faces many challenges in retaining their cultures and languages, in part, as a legacy of discrimination. Approximately half of survey respondents had some participation in the collection of their own food (grow, hunt, gather).

Highlighted Links & Relationships between Determinants of Health

Apparent links and relationships between determinants are noted here and grouped by vulnerable populations, physical activity, priority communities, the physical environment and culture. Vulnerable populations include young mothers, children, women, homeless people, youth and the elderly.

Mothers

Rates of teenage mothers (health status), single mothers (social support networks), and reported smoking during pregnancy (personal health and coping skills) are relatively high. The children of these mothers, in turn, are more vulnerable.

Children

The number of children vulnerable in physical, social, emotional, language, and communication development in early years is relatively high and increasing (early childhood development); many children are in need of protection (social protection).

Women

The rate of violence against women is high (social support network) and women earn substantially less than men (gender).

Homeless

The region has a homeless population as well as a sizable number of people in “precarious housing,” conditions (social environment) a condition which reduces personal health and limits life opportunities. Women and children who are homeless or precariously housed are particularly vulnerable.

Youth

Some of the region’s youth have low high school graduation rates (education and literacy) and many are leaving the valley to find work. The region has an insufficient number of youth to replace retiring workers (employment and working conditions).

Elderly

Many elderly live alone and may be isolated (social support network) from friends and services due, in part, to a sprawling, automobile dependent environment (physical environment). Senior residential care spaces are at a premium (social environment).

Priority communities

Communities that deserve priority attention include the **City of Duncan** with respect to housing affordability, low income, and property crime; the **Cowichan LHA** to address teen mothers, domestic violence, children in need of protection, respiratory disease, and alcohol related deaths; the **Lake Cowichan LHA** with regard to its Early Development Index, child hospitalization for injuries & blood poisonings, and juvenile crime; and **First Nations communities** in regard to single parents and economic diversity.

Physical activity

Modern culture (culture) and the built environment (physical environment) are contributing to a declining and unhealthy level of physical activity (personal health & coping skills, early childhood development) across all age groups. Physical activity can serve to reduce risk for many diseases and promote overall physical and mental health.

Physical Environment

The CVRD continues to experience air quality, water quality and drinking water quality issues. A sprawling development pattern contributes to social isolation, automobile dependency, and attendant environmental pollution.

Culture

Many are keen to grow or collect their own food in order to eat healthy food; yet only a relatively small proportion of food eaten in the region is locally grown or collected. The legacy of discrimination against other cultural groups and aboriginals has harmed their cultures, which in turn impacts individual and community health.

Next Steps

Recommended Actions

Actions emerging from the research, community survey, and community workshops are identified here and organized according to area-wide actions and hot topics. These actions may be viewed as priorities by workshop attendees, however, they will need to be further reviewed and prioritized by Our Cowichan Communities Health Network and partner organizations in a participatory engagement context.

Community priorities were also identified in community workshops and represent a starting point for future discussions and action planning which will further be informed by the findings of this health profile and any additional research. A list of priorities by community is provided in Appendix B.

Area wide

- Undertake action planning in communities with community leaders, network members and partner organizations. The OCCHN has recently obtained grant funding for this initiative.
- Create a priority setting framework that is based on a participatory approach and principles of need, organizational mandates, resources, collaboration, and efficacy.
- Facilitate building ownership of relevant priorities consistent with the mandates of partner organizations within the network.
- Consider an expanded community survey covering specific topics that is statistically significant (opt out) and ensures representation based on gender, ethnicity, residency, and

other parameters deemed important. The following topics could benefit from such a survey:

- Participation in community organizations, teams, and groups
- Barriers to healthcare and well-being
- Participation in community organizations
- Daily consumption of fruits and vegetables
- Number of times people typically exercise per week
- Amount of time people typically spend in front of screens per day outside of work/school
- How many visited a dentist in the past year
- The extent to which people grow, hunt, or gather their own food

Specific Hot Topics

Specific hot topics are organized by vulnerable populations, physical activity, physical environment, and culture.

1. For **mothers**, strengthen social support services within the existing networks; First Nations community culture and approaches can provide inspiration.
2. For **children**, prioritize reduce vulnerabilities and promote holistic child health through “Success by 6” programs and similar initiatives.
3. For **young adults (20-24)** focus on full-time job placement with appropriate training and education.
4. For the **homeless and precariously housed**, adopt a collaborative area-wide “Housing first” approach.

5. For the **elderly**, promote inclusionary approaches and expand access to services. First Nations approaches can provide inspiration.
 6. Promote **increased physical activity for all populations** and throughout the region by adopting “walk first” approaches to community design and transportation planning. Encourage and facilitate a movement to get children to spend more time in nature.
 7. For a healthier **natural environment** collaborate and prioritize improving air quality and water quality, both groundwater and surface water. Reduce greenhouse gas emissions by decreasing automobile dependence and increasing use of active forms of transportation.
 8. **Cultural reconciliation** between aboriginal and non-aboriginal peoples is a fundamental step in improving everyone’s health. Specific actions include community events such as “Walk for the Nations,” programs like “Creating Cultural Connections,” providing cultural safety for health services, increasing access to healthy and culturally appropriate food, promoting the use of the Hul’qumi’num Language with clever approaches such as signage in traditional language and expansion of language instruction in schools.
- Island Health
 - Cowichan Valley Regional District (CVRD)
 - Planning, environmental management, and economic development functions in particular
 - House of Friendship Society
 - Social Planning Cowichan
 - Cowichan Valley School District (79)
 - CVRD Hospital Board
 - Success by 6
 - Cowichan Women Against Violence Society
 - Ministry for Children and Family Development
 - Ministry of the Environment
 - Ministry of Forests, Land, Natural Resource Operations

Partners

A number of partner organizations are identified here that represent any one or more of the following: 1) a high level of interest; 2) staff and funding capacity; 3) a region-wide mandate; and, 4) technical expertise to assist in achieving the desired outcomes identified by the OCCHN. While by no means an exhaustive list of partners, the following organizations are viewed as essential partners:

Selected Resources

How to Build a Healthy Community

There are a variety of useful websites and documents containing relevant information to the discussion of health and the built environment. Three key resources that have compiled a wealth of relevant material are:

1. Healthy Communities Practice Guide, published by the Canadian Institute of Planners (2012). Available [here](#).
2. The Canadian Institute of Planners Healthy Communities Program (2012). Available [here](#).
3. Inventory of Built Environment Resources, National Collaborating Centre for Environmental Health (2014). Available [here](#).

References

Baumeister, RF and MR Leary. 1995. *The need to belong: Desire for interpersonal attachments as a fundamental human motivation.* *Psychological Bulletin*; 117(3): 497-529.

BC Association of Farmers' Markets. 2013. *Find a Local Market.* Available at <http://met.bcfarmersmarket.org/market-search>. Accessed April 2014.

BC Council for Families. 2011. *Family Professionals: Growing Together Child and Parent Society.* Available at <http://www.bccf.ca/professionals/directory/growing-together-child-and-parent-soceity-duncan-bc>. Accessed May 2014.

BC Ministry of Health. 2009. *The Report of the Clinical Prevention Policy Review Committee: A Lifetime of Prevention.* Available at: http://www.health.gov.bc.ca/library/publications/year/2009/CPPR_Lifetime_of_Prevention_Report.pdf. Accessed June 2014.

BC Non-Profit Housing Association. 2012. *Our Home, Our Future: Projections of Rental Housing Demand and Core Housing Need, Cowichan Valley Regional District to 2036.* Available at <http://www.bcnpha.ca/pages/research/bcnpha-rental-demand-projections-to-2036.php>. Accessed April 2014.

BC Stats. 2014. *British Columbia Regional District and Municipal Population Estimates.* Available at: <http://www.bcstats.gov.bc.ca/StatisticsBySubject/Demography/PopulationEstimates.aspx>. Accessed February 2014.

BC Stats. 2013c. *Business Counts and Employment by Industry.* Available at <http://www.bcstats.gov.bc.ca/StatisticsBySubject/BusinessIndustry/BusinessCountsEmploymentByIndustry.aspx>. Accessed May 2014.

BC Stats. 2013b. *British Columbia Incorporations by Development Region, Regional District and Municipality.* Available at: <http://www.bcstats.gov.bc.ca/StatisticsBySubject/Economy/BusinessFormationsandFailures.aspx>. Accessed January 2014.

BC Stats. 2013c. *Adults (19-64) Receiving Basic Income Assistance.* Available at: <http://www.bcstats.gov.bc.ca/StatisticsBySubject/SocialStatistics/IncomeAssistanceEmploymentInsurance.aspx>. Accessed January 2014.

BC Stats 2012a. *Total Building Permits (Value).* Available at: <http://www.bcstats.gov.bc.ca/StatisticsBySubject/Economy/BuildingPermitsHousingStartsandSales.aspx>. Accessed January 2014.

BC Stats. 2008. *Reference Maps.* Available at <http://www.bcstats.gov.bc.ca/statisticsbysubject/geography/referencemaps/health.aspx>. Accessed April 2014.

Blane D, Brunner E and R Wilkinson. 1996. *Health and Social Organization-Towards a Health Policy for the Twenty-First Century.* Routledge, New York.

British Columbia Air Quality (BCAQ). 2009. *British Columbia Air Quality and Health Benefits Report.* Accessed online at http://www.bcairquality.ca/reports/bc_aq_health_benefits.html

British Columbia Ministry of Education. 2013a. *Six-Year Completion and Grade 12 Graduation Rates- 2012-2013- CVRD*. Available at: <http://www.bced.gov.bc.ca/reports/pdfs/graduation/079.pdf>. Accessed January 2014.

British Columbia Ministry of Education. 2013b. *Six-Year Completion and Grade 12 Graduation Rates- 2012-2013- Nanaimo-Ladysmith*. Available at: <http://www.bced.gov.bc.ca/reports/pdfs/graduation/061.pdf>. Accessed January 2014.

British Columbia Ministry of Education. 2013c. *Six-Year Completion and Grade 12 Graduation Rates- 2012-2013- Public and Independent Schools Combined*. Available at: <http://www.bced.gov.bc.ca/reports/pdfs/graduation/prov.pdf>. Accessed January 2014.

British Columbia Ministry of Labour and Citizens Services, Policy and Practice Branch. No date. *Counting Homelessness: Guidelines for a Standardized Method for BC Communities*. Available on line at: http://www.housing.gov.bc.ca/pub/Counting_Homelessness.pdf

Bryant, T., Chisholm, S. and Crowe, E. 2002. *Housing as a Determinant of Health*. Presented at *The Social Determinants of Health Across the Life-Span Conference*, Toronto, ON. Available at: http://www.guelphrestore.ca/pdf_files/09_housing_e.pdf. Accessed February 2014.

Canadian Alliance to End Homelessness. n.d *Housing First*. Available at <http://www.caeh.ca/a-plan-not-a-dream/housing-first/>. Accessed April 2014.

Canadian Cancer Society. 2014. *Alcohol, Tobacco*. Available at <http://www.cancer.ca/en/cancer-information/cancer-101/what-is-a-risk-factor/?region=on>. Accessed May 2014.

Canadian Mental Health Association. 2012. *Cowichan Valley: Warmland House*. Available at <http://cowichanvalley.cmha.bc.ca/how-we-can-help/employment>. Accessed April 2014.

Canadian Mortgage and Housing Corporation. 2013. *Housing Market Information: Seniors Housing Report, British Columbia*.

Canadian Mortgage and Housing Corporation. n.d. *Housing in Canada Online: Definitions of Variables*. Available at http://cmhc.beyond2020.com/HiCODefinitions_EN.html#_Core_Housing_Need_Status. Accessed April 2014.

Canadian Public Health Association. 2011. *Too High a Cost: A Public Health Approach to Alcohol Policy in Canada*. Available at <http://www.cpha.ca/en/programs/policy/alcohol.aspx>. Accessed May 2014.

Canadian Women's Foundation. 2014. *Fact Sheet: Moving Women Out of Violence*. Accessed online at http://www.cwav.org/about_abuse. Accessed May 2014.

Canadian Women's Foundation. n.d. *The Facts About Women and Poverty*. Accessed online at <http://www.canadianwomen.org/facts-about-poverty#Focus>. Accessed April 2014.

Centers for Disease Control and Prevention (CDC). 2014. *Family Health-Regular Check-ups are Important*. Accessed online at <http://www.cdc.gov/Family/checkup/index.htm>

Centre for Addiction and Mental Health. 2011. *Canada's Low-Risk Alcohol Drinking Guidelines*. Available at http://www.camh.ca/en/hospital/health_information/a_z_mental_health_and_addiction_information/alcohol/Pages/low_risk_drinking_guidelines.aspx. Accessed May 2014.

Chandler MJ and C Lalonde. 1998. *Cultural Continuity as a Hedge against Suicide in Canada's First Nations*. *Transcultural Psychiatry*; 35: 191-219

CivicInfoBC. 2011. *BC Municipal Voter Turnout Calculations – November 19, 2011*. Available at http://www.civicinfo.bc.ca/Library/Elections/BC_Voter_Turnout%20--%20Elections%20BC%20--2011.pdf. Accessed May 2014.

Cowichan Green Community. n.d. Available at <http://www.cowichangreencommunity.org/>. Accessed April 2014.

Cowichan Tribes. 2013. *Quw'utsun Smuneem Elementary School*. Available at <http://www.cowichantribes.com/memberservices/Education%20and%20Culture/Elementary%20School>. Accessed May 2014.

Cowichan Tribes. 2010. *Water Act Modernization Initiative: Submission to the Ministry of Environment, Water Stewardship Division, Government of British Columbia*. Available at <http://engage.gov.bc.ca/watersustainabilityact/files/2013/10/Cowichan-Tribes.pdf>. Accessed May 2014.

Cowichan Valley Citizen. April 18, 2014. *Grant to Launch Seniors Co-op*. Available at <http://www.cowichanvalleycitizen.com/news/grant-to-launch-seniors-co-op-1.975921>. Accessed April 2014.

Cowichan Valley Division of Family Practice. 2014. *Patient Attachment Survey*.

Cowichan Valley Regional District. 2013. *2012 State of the Economy Report*. Available at: <http://www.cvrld.bc.ca/DocumentCenter/Home/View/9888>. Accessed February 2014.

Cowichan Valley Regional District. 2011. *CVRD Voter Turnout*. Available at <http://www.cvrld.bc.ca/index.aspx?nid=988&art=3292&admin=1>. Accessed May 2014.

Cowichan Valley Regional District. 2010. *2010 State of the Environment*. Available at <http://www.12things.ca/12things/resources.php>. Accessed May 2014.

Cowichan Women Against Violence Society. n.d.(a) *What is Somenos House?* Available at http://www.cwav.org/what_is_somenos_house. Accessed April 2014.

Cowichan Women Against Violence Society. n.d.(b) *Violence Against Women & Young Girls in the Cowichan Valley*. Available at <https://duncan.civicweb.net/Documents/DocumentDisplay.aspx?Id=20982>. Accessed May 2014.

CSEP. 2014. *Canadian Physical Activity Guidelines and Canadian Sedentary Behaviour Guidelines*. Available at <http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/pa-ap/index-eng.php>. Accessed May 2014.

Davidson KW, Trudeau J, van Roosmalen E, Stewart M and S Kirkland. 2006. *Perspective: Gender as a Health Determinant and Implications for Health Education*. *Health Education Behaviour*; 33: 731-743

De Kretser DM. 2010. Determinants of male health: the interaction of biological and social factors. *Asian Journal of Andrology*; 12: 291-297.

de Laplante, N., Srivastava, R., & Williams, K. 2013. CFMS Position Statement on the Social Determinants of Health in Canada. Available at: <http://www.cfms.org/attachments/article/995/SDH%20Policy%20Statement%20.pdf>. Accessed January 2014.

Dieticians of Canada. 2011. Cost of Eating in British Columbia: 2011. Available at <http://www.dietitians.ca/Secondary-Pages/Public/The-Cost-of-Eating-in-British-Columbia.aspx>. Accessed April 2014.

Elections BC. 2013. 2013 Statement of Votes – 40th Provincial General Election – May 14, 2013. Available at <http://www.elections.bc.ca/index.php/resource-centre/reports/>. Accessed May 2014.

Elections BC. 2009. 2009 Statement of Votes – 39th Provincial General Election – May 12, 2009. Available at <http://www.elections.bc.ca/index.php/resource-centre/reports/>. Accessed May 2014.

Elections BC. 2005. 2005 Statement of Votes – 38th Provincial General Election – May 17, 2005. Available at <http://www.elections.bc.ca/index.php/resource-centre/reports/>. Accessed May 2014.

Elections BC. 2001. 2001 Statement of Votes – 37th Provincial General Election – May 16, 2001. Available at <http://www.elections.bc.ca/index.php/resource-centre/reports/>. Accessed May 2014.

Elections BC. 1996. 1996 Statement of Votes – 36th Provincial General Election – May 28, 1996. Available at <http://www.elections.bc.ca/index.php/resource-centre/reports/>. Accessed May 2014.

Employment and Social Development Canada. 2014. Indicators of Well-being in Canada: Family Life – Marriage. Available at: http://www4.hrsdc.gc.ca/3ndic.1t.4r@-eng.jsp?iid=78#M_2. Accessed April 2014. Gone JP. 2011. The Red Road to Wellness: Cultural Reclamation in a Native First Nations Community Treatment Center. *American Journal of Community Psychology*. 47: 187-202.

Gorman BK and JG Read. 2006. Gender Disparities in Adult Health: An Examination of Three Measures of Morbidity. *Journal of Health and Social Behaviour*; 47(2): 95-110.

Healey GK and LM Meadows. 2008. Tradition and Culture: An Important Determinant of Inuit Women's Health. *Journal of Aboriginal Health*; Jan 2008:25-33.

Health Canada. 2012a. Food and Nutrition: Sodium in Canada. Available at <http://www.hc-sc.gc.ca/fn-an/nutrition/sodium/index-eng.php>. Accessed May 2014.

Health Canada. 2012b. Food and Nutrition: Trans Fat. Available at <http://www.hc-sc.gc.ca/fn-an/nutrition/gras-trans-fats/index-eng.php>. Accessed May 2014.

Health Canada. 2009. The Effects of Oral Health on Overall Health. Accessed online at <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/life-vie/dent-eng.php>

Health Canada. 2007. Smoking and Your Body: Pregnancy. Available at <http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/body-corps/preg-gros-eng.php>. Accessed May 2014.

Health Canada, Canadian Paediatric Society, Dieticians of Canada, Breastfeeding Committee for Canada. n.d. Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months. Available at <http://www.hc-sc.gc.ca/fn-an/nutrition/infant-nourisson/recom/index-eng.php>. Accessed May 2014.

Hill AVS. 2006. Aspects of Genetic Susceptibility to Human Infectious Diseases. *Annual Review of Genetics*; 40: 469-486.

Holt-Lunstad J, TB Smith and JN Layton. 2010. Social Relationships and Mortality Risk: A Meta-Analytic Review. *PLoS Med*; 7(7): e1000316.

Institute of Medicine (US) Committee on Assessing Interactions among Social, Behavioural and Genetic Factors in Health- Edited by Hernandez LM, Blazer DG (IM). 2006. *Genes, Behaviour, and the Social Environment: Moving Beyond the Nature/Nurture Debate*. National Academic Press (US), Washington, DC.

Kickbusch I. 2007. Gender—a critical determinant of health in a global world. *International Journal of Public Health*; 52: S3-S4.

Knibb-Lamouche J. 2012. Culture as a Social Determinant of Health: Examples from Native Communities. Retrieved online at <http://www.iom.edu/~media/Files/Activity%20Files/SelectPops/HealthDisparities/Culture%20as%20a%20Social%20Determinant%20of%20Health.pdf>

Lachman, K. Business Development Officer. Economic Development Cowichan, Cowichan Valley Regional District. Personal Communication. February 6, and February 13, 2014.

Lambden J, Receveur O and HV Kuhnlein. 2007. Traditional Food Attributes must be Included in Studies of Food Security in the Canadian Arctic. Centre for Indigenous Peoples' Nutrition and Environment. McGill University, Montreal, Canada.

Levine, J. 2014. What are the risks of sitting too much? Mayo Clinic. Available at Matthews CE, et al. Amount of time spent in sedentary behaviors and cause-specific mortality in US adults. *The American Journal of Clinical Nutrition*. 2012;95:437. Accessed May 2014.

Living Wage for Families Campaign. n.d. What is a Living Wage? Available at: <http://www.livingwageforfamilies.ca/about/what-is-a-living-wage/>. Accessed June 2014.

Lombardi E. 2001. Enhancing transgender health care. *American Journal of Public Health*: 91 (6): 869-872.

Lutfiyya MN, Cannon M and MS Lipsky. 2014. An argument for male gender as a root cause of fundamental social determinant of health. *Disease-a-month*; 60:145-149.

Marks, Nadine & James Lambert. 1996. Marital Status Continuity and Change Among Young and Midlife Adults: Longitudinal Effects on Psychological Well-Being. NSFH Working Paper No. 71. Madison: University of Wisconsin-Madison: Center for Demography and Ecology.

Mental Health Canada. n.d. Understanding Sleep. Available at http://www.mentalhealthcanada.com/article_detail.asp?lang=e&id=28. Accessed May 2014.

Mental Health Commission of Canada. n.d. Issue: Housing and Homelessness. Available at <http://www.mentalhealthcommission.ca/English/issues/housing?routetoken=be1782c0c3879fb1f6fe1bc144df3ee5&terminal=23>. Accessed April 2014.

Ministry of Children and Family Development. 2011.

Ministry of Jobs, Tourism and Skills Training, 2013. *Major Projects Inventory (September 2013)*. Available at: http://www.jtst.gov.bc.ca/ministry/major_projects_inventory/index.htm. Accessed January 2014.

Ministry of Justice. n.d. *Crime and Police Statistics*. Available at <http://www.pssg.gov.bc.ca/policeservices/statistics/#regionalprofiles>. Accessed May 2014.

Moynihan, P., & Kelly, S. 2014. *Effect on Caries of Restricting Sugars Intake: Systematic Review to Inform WHO Guidelines*. *Journal of Dental Research*: 2014;93(1):8-18. doi: 10.1177/0022034513508954. Available at <http://jdr.sagepub.com/content/93/1/8>. Accessed May 2014.

National Collaborating Centre for Aboriginal Health. 2011. *Access to Health Services as a Social Determinant of First Nations, Inuit and Metis Health*. Accessed online at [http://www.nccah-cnca.ca/Publications/Lists/Publications/Attachments/22/Access%20to%20Health%20Services%20\(English\).pdf](http://www.nccah-cnca.ca/Publications/Lists/Publications/Attachments/22/Access%20to%20Health%20Services%20(English).pdf)

National Heart, Lung, and Blood Institute. n.d. *Reduce Screen Time*. Accessed online at <http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/reduce-screen-time/index.htm>

Ontario Public Health Association. n.d. *Health Equity Checklist Reference Document*. Available at: http://opha.on.ca/OPHA/media/Resources/Resource%20Documents/Health_Equity_Checklist-Reference_Document.pdf?ext=.pdf. Accessed February 2014.

Oyebode, O., Gordon-Dseagu V., Walker A., Mindell, J. 2014. *Fruit and vegetable consumption and all-cause, cancer, and CVD mortality: analysis of Health Survey for England data*. *Journal Epidemiol Community Health* 2014;0:1-7. doi: 10.1136/jech-2013-203500. Available at http://jech.bmj.com/content/early/2014/03/03/jech-2013-203500.short?g=w_jech_ahead_tab. Accessed May 2014.

Provincial Health Services Authority. 2011. *Promoting Healthy Eating and Sustainable Local Food in BC: An Action Framework for Public Institutions – Health Authorities, Educational Institutions, Childcare Facilities, and Local Governments*. Available at https://www.phsa.ca/NR/rdonlyres/70B15B27-6E79-42D3-9B27-D50AAFEFE71/0/FoodActionFramework_FINAL_Dec2011.pdf. Accessed April 2014.

Provincial Health Services Authority. (2007). *“Creating a Healthier Built Environment in BC –Summary Report.”*

Public Health Agency of Canada. 2013. *What Makes Canadians Healthy or Unhealthy?* Available at: <http://www.phac-aspc.gc.ca/ph-sp/determinants/determinants-eng.php#unhealthy>. Accessed February 2014.

Public Health Agency of Canada. 2011. *Physical Activity*. Available at <http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/pa-ap/index-eng.php>. Accessed May 2014.

Public Health Agency of Canada. 2010. *The Chief Public Health Officer’s Report on the State of Public Health in Canada: Growing Older – Adding Life to Years*. Available at: <http://www.phac-aspc.gc.ca/cphorsphc-respcacsp/2010/fr-rc/index-eng.php>. Accessed April 2014.

Public Health Association of British Columbia. 2008. *Health Inequities in British Columbia: Discussion Paper*. 2008. Available at: http://www.phabc.org/files/HOC_Inequities_Report.pdf. Accessed February 2014.

Region of Waterloo Public Health. 2011. *Addressing Social Determinants of health in the Waterloo Wellington Local Health Integration Network Area*. Available at: http://chd.region.waterloo.on.ca/en/researchResourcesPublications/resources/SDOH_FullReport.pdf. Accessed February 2014.

Rioux M., Hay D.I. 1993. *Well-Being: A Conceptual Framework*. Vancouver. Social Planning and Research Council of British Columbia.

Romphf, Susan. 2013. *Residential Access Case Manager*. Home and Community Care Division, VIHA. 2013. Personal communication.

Ross, D. P., & Roberts, P. (1999). *Income and Child Well-being: A new perspective on the poverty debate*. Canadian Council on Social Development.

Royal Society for Public Health (RSPH). 2012. *The Built Environment and Health*. *Perspectives in Public Health*; 132: 105.

Socha T, Mehdi, Z, Chambers, L, Abraham R and T Fiddler. 2012. *Food Security in a Northern First Nations Community: An Exploratory Study on Food Availability and Accessibility*. *Journal of Aboriginal Health* 8.2: 5-14.

The Standing Senate Committee on Social Affairs, Science and Technology. 2009. *A Healthy, Productive Canada: A Determinant of Health Approach*. Available at: <http://www.parl.gc.ca/content/sen/committee/402/popu/rep/rephealth1jun09-e.pdf>. Accessed February 2014.

Truth and Reconciliation Commission of Canada. n.d., *Residential Schools*. Available at <http://www.trc.ca/websites/trcinstitution/index.php?p=4>. Accessed May 2014.

Social Planning Cowichan. 2013. *Literacy Assets and Gaps for Families and Street Youth Final Report*. Literacy Now Cowichan. Report is available at: www.literacynowcowichan.com.

Social Planning Cowichan. 2014a. *Aboriginal Off-Reserve Housing in the Cowichan Region: A Report for the Regional Affordable Housing Directorate*.

Social Planning Cowichan. 2014b. *Cowichan Region Homelessness Report (February 2014): A Report of the Regional Affordable Housing Directorate*.

Statistics Canada. 2012. *Classification of Full-time and Part-time Work Hours*. Available online at: <http://www.statcan.gc.ca/concepts/definitions/labour-travail-class03b-eng.htm>. Accessed June 2014.

Statistics Canada 2014a. *Employment Insurance Beneficiaries Receiving Regular Benefits by Census Subdivision*.

Statistics Canada. 2014b. Footnotes. Available at: <https://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=5919021&Data=Count&SearchText=ladySmith&SearchType=Begins&SearchPR=01&A1=All&B1=All&Custom=&TABID=1>. Accessed January 2014.

Statistics Canada. 2013a. *National Household Survey (NHS) Population Profiles. 2011 National Household Survey*. Available at: <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/aprof/index.cfm?Lang=E>. Accessed February 2014.

Statistics Canada. 2013b. *National Household Survey (NHS) Aboriginal Population Profiles. 2011 National Household Survey*. Available at: <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/aprof/index.cfm?Lang=E>. Accessed February 2014.

- Statistics Canada. 2013c. Table 380-0102 - Gross domestic product indexes, annual (2007=100 unless otherwise noted), CANSIM (database). Available at: <http://www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&p2=33&id=3800102>. Accessed February 2014.
- Statistics Canada. 2012a. Census Profile. 2011 Census. Available at: <http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E>. Accessed February 2014.
- Statistics Canada. 2012b. Canadian Community Health Survey (CCHS), Annual Component. Accessed April 2014.
- Statistics Canada. 2012c. Health indicator profile, CANSIM Table 105-0501. Available at <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1050501>. Accessed May 2014.
- Statistics Canada. 2012d. Life Expectancy at birth, by sex, by province. Available at <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/health26-eng.htm>. Accessed May 2014.
- Statistics Canada. 2011a. Women in Canada: A Gender-based Statistical Report. July 2011, p. 155. Available at: http://www5.statcan.gc.ca/access_acces/alternative_alternatif.action?l=eng&loc=/pub/89-503-x/89-503-x2010001-eng.pdf. Accessed April 2014.
- Statistics Canada. 2011b. Canadian Community Health Survey (CCHS) – Mental Health. Accessed May 2014.
- Statistics Canada. 2009. Low Income Measures. Available at: <http://www.statcan.gc.ca/pub/75f0002m/2009002/s3-eng.htm#n2>. Accessed January 2014.
- Statistics Canada. 2007a. 2006 Community Profiles. 2006 Census. Available at: <http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E>. Accessed February 2014.
- Statistics Canada. 2007b. Aboriginal Population Profile. 2006 Census. Available at: <http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-594/index.cfm?Lang=E>. Accessed February 2014.
- Statistics Canada. 2002a. 2001 Community Profiles. 2001 Census. Available at: <http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E>. Accessed February 2014.
- Statistics Canada 2002b. 2001 Aboriginal Population Profiles. 2001 Census. Available at: <https://www12.statcan.gc.ca/english/profil01/AP01/Index.cfm?Lang=E>. Accessed February 2014.
- Supportive Housing and Diversity Group. 2008. Best Practices in Developing Anti-Oppressive, Culturally Competent, Supportive Housing: Literature Review. Available at http://knowledgex.camh.net/amhspecialists/guidelines_materials/Pages/shad_housing_toolkit10.aspx. Accessed April 2014.
- Tetla. 2014. Website of the Tetla Tsetsuwatil. Available at: <http://www.tetla.org/>
- The College of Family Physicians of Canada (CFPC). 2005. The Role of the Family Doctor in Public Health and Emergency Preparedness-A Discussion Paper. Accessed online at http://www.cfpc.ca/uploadedFiles/Resources/Resource_Items/Role_Fam_Doc_Dec05.pdf
- Underdown, Angela. 2007. Young Children's Health and Well-being. Berkshire: Open University Press.

University of British Columbia. n.d. Early Development Instrument. Available at: <http://earlylearning.ubc.ca/edi/>. Accessed January 2014.

University of British Columbia. 2013. EDI Data Tables. Available at: <http://earlylearning.ubc.ca/maps/edi/data/>. Accessed January 2014.

Vancouver Coastal Health (VCH). 2009. North Shore Community Health Profile. Accessed online at: http://www.vch.ca/media/CommunityProfile_NorthShore-2009.pdf

Vancouver Island Health Authority. 2012. Local Health Area Profiles: Cowichan (65), Lake Cowichan (66), Ladysmith (67), Nanaimo (68). Available at http://www.viha.ca/mho/stats/lha_profiles.htm. Accessed May 2014.

Vancouver Island Real Estate Board. 2013. 2013 Annual MLS Sales Summary (Zones). Nanaimo, BC.

Vancouver Island Real Estate Board. 2012. 2012 Annual MLS Sales Summary (Zones). Nanaimo, BC.

Vancouver Island Real Estate Board. 2011. 2011 Annual MLS Sales Summary (Zones). Nanaimo, BC.

Vancouver Island Real Estate Board. 2011. 2010. Annual MLS Sales Summary (Zones). Nanaimo, BC.

Vancouver Island Real Estate Board. 2009. 2009. Annual MLS Sales Summary (Zones). Nanaimo, BC.

Wilkonson, R., Pickett, K., & R.B. Reich. 2011. *The Spirit Level: Why Great Equality Makes Societies Stronger*. Penguin Books: London, England.

World Health Organization. 2013. Violence Against Women Fact Sheet No. 239. Available at <http://www.who.int/mediacentre/factsheets/fs239/en/>

World Health Organization. 2014a. *The Ottawa Charter for Health Promotion*. Retrieved from First International Conference on Health Promotion, Ottawa, 21 November 1986: <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/index1.html>

World Health Organization. 2014b. Genomic Resource Centre. Available at: <http://www.who.int/genomics/public/geneticdiseases/en/>. Accessed April 2014.

World Health Organization. 2003. *Social Determinants of Health: The Solid Facts, Second Edition*. WHO Regional Office for Europe, Copenhagen Denmark.

World Health Organization, UNICEF. 2003. *Global Strategy for Infant and Young Child Feeding*. Available at: <http://www.who.int/nutrition/publications/infantfeeding/9241562218/en/>. Accessed May 2014.

Yang, Q., Zhang, Z., Gregg, E., Flanders, D., Merritt, R. & F. Hu. 2014. Added Sugar Intake and Cardiovascular Diseases Mortality Among US Adults. *JAMA Internal Medicine*: 2014; 174(4): 516-524. doi: 10.1001/jamainternmed.2013.13563. Available at <http://archinte.jamanetwork.com/article.aspx?articleid=1819573&resultClick=3>. Accessed May 2014.

Appendix A: Cowichan Community Health Survey (2014) Questionnaire

COMMUNITY HEALTH SURVEY

WHO WE ARE:

The vision of *Our Cowichan Communities Health Network* is that all citizens of the Cowichan Communities enjoy good health.

The geographic area includes the Cowichan Region which stretches from the Gulf Islands of Valdes in the East to the Mouth of the Nitinat in the West, from the Malahat in the South to North Oyster in the North. There are four Municipalities, nine electoral areas, nine First Nations and Métis, local and regional government organizations with a population of approximately 81,000 people.



WE WANT TO HEAR FROM YOU!

The purpose of this survey is to collect information from the communities served by *Our Cowichan Communities Health Network* to gain a better understanding of the current health and wellness of our residents. The information collected will be used to develop a Community Health Profile for the Cowichan region. This profile will ultimately be used to develop programs to improve the health of our communities and residents.

YOUR SURVEY RESPONSE WILL BE ANONYMOUS

Please do not put your name or other personal identification on this survey.

All survey data will remain anonymous. **If you are under the age of 18, please check with a parent or guardian before completing the survey.**



12 Key Determinants of Health

Submit your paper survey to Cindy Lise, Regional Facilitator, by April 25, 2014:

- By email: cindylisecchn@shaw.ca
- By mail: Our Cowichan, PO Box 20106, Duncan, BC, V9L 5H1

You can also complete the survey online at:

<http://fluidsurveys.com/s/CowichanCommunityHealthSurvey/> or by scanning the QR code to the right with your smart phone.



Today's date: ____/____/____ (DD/MM/YYYY)

INSTRUCTIONS: Please check only ONE answer, unless otherwise stated.

1. What is your gender?

- Male
- Female
- Transvariant or Transgender
- Prefer not to answer

2. What is your age?

- Under 18 years
- 18 – 34 years
- 35 – 49 years
- 50 – 64 years
- 65 years or over

3. Where do you live?

- | | |
|--|--|
| <input type="checkbox"/> City of Duncan | <input type="checkbox"/> District Municipality of North Cowichan |
| <input type="checkbox"/> Town of Ladysmith | <input type="checkbox"/> Mill Bay/ Malahat Area A |
| <input type="checkbox"/> Town of Lake Cowichan | <input type="checkbox"/> Shawnigan Lake Area B |
| <input type="checkbox"/> Malahat Reserve(s) | <input type="checkbox"/> Cobble Hill Area C |
| <input type="checkbox"/> Halalt Reserve(s) | <input type="checkbox"/> Cowichan Bay Area D |
| <input type="checkbox"/> Cowichan Reserve(s) | <input type="checkbox"/> Sahtlam / Glenora / Cowichan Station Area E |
| <input type="checkbox"/> Lake Cowichan Reserve | <input type="checkbox"/> Cowichan Lake South/ Skutz Falls Area F |
| <input type="checkbox"/> Lyackson Reserve(s) | <input type="checkbox"/> Saltair / Gulf Islands Area G |
| <input type="checkbox"/> Penelakut Reserve(s) | <input type="checkbox"/> North Oyster / Diamond Area H |
| <input type="checkbox"/> Ditidaht Reserve(s) | <input type="checkbox"/> Youbou Area I |
| <input type="checkbox"/> Stz'uminus Reserve(s) | |

4. Do you consider yourself to be any of the following? *Please check all that apply.*

- | | |
|--|--|
| <input type="checkbox"/> Aboriginal (i.e., First Nations, Métis, or Inuit) | <input type="checkbox"/> Latin American/Hispanic |
| <input type="checkbox"/> Arab | <input type="checkbox"/> South Asian (i.e., East Indian, Pakistani, Sri Lankan) |
| <input type="checkbox"/> Black (i.e., African, Caribbean) | <input type="checkbox"/> Southeast Asian (i.e., Vietnamese, Cambodian, Malaysian, Laotian) |
| <input type="checkbox"/> Caucasian (European descent) | <input type="checkbox"/> West Asian (i.e., Iranian, Afghan) |
| <input type="checkbox"/> Chinese | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Filipino | <input type="checkbox"/> Prefer not to answer |
| <input type="checkbox"/> Japanese | |
| <input type="checkbox"/> Korean | |

YOUR HEALTH

5. Generally, how would you rate your physical health?

- Excellent
- Very good
- Good
- Fair
- Poor
- Prefer not to answer

6. Generally, how would you rate your mental health?

- Excellent
- Very good
- Good
- Fair
- Poor
- Prefer not to answer

7. In the past 12 months, have you made any changes to improve your health and well-being?

Please check all that apply.

- | | |
|--|--|
| <input type="checkbox"/> Increased exercise, sports, or physical activity | <input type="checkbox"/> Reduced stress level |
| <input type="checkbox"/> Tried to achieve a healthy weight (lost or gained weight) | <input type="checkbox"/> Reached out to my friends or social support network |
| <input type="checkbox"/> Changed diet or improved eating habits | <input type="checkbox"/> Consulted a health care professional |
| <input type="checkbox"/> Drank less alcohol | <input type="checkbox"/> Other (please describe):
_____ |
| <input type="checkbox"/> Quit smoking or reduced tobacco use | <input type="checkbox"/> I haven't made any changes in the past year |
| <input type="checkbox"/> Getting enough sleep | <input type="checkbox"/> Prefer not to answer |

8. Is there anything that is stopping you from making improvements to your health?

Please check all that apply.

- | | |
|--|--|
| <input type="checkbox"/> Caregiver responsibilities (e.g., children or adult dependents) | <input type="checkbox"/> Other (please describe):
_____ |
| <input type="checkbox"/> Physical or mental health condition | <input type="checkbox"/> Services or programs not available in area (please specify what type of service/program is not available):
_____ |
| <input type="checkbox"/> Too stressed | <input type="checkbox"/> There is nothing stopping me |
| <input type="checkbox"/> Lack of time | <input type="checkbox"/> I don't feel like I need to make improvements |
| <input type="checkbox"/> Cost | <input type="checkbox"/> Prefer not to answer |
| <input type="checkbox"/> Language barriers | |
| <input type="checkbox"/> Transportation problems | |
| <input type="checkbox"/> Lack of knowledge | |

9. Has a doctor ever diagnosed you with any of the following conditions?

(Do not include any misdiagnoses). Please check all that apply.

- | | |
|---|---|
| <input type="checkbox"/> Diabetes | <input type="checkbox"/> Dementia |
| <input type="checkbox"/> High cholesterol | <input type="checkbox"/> Brain or nervous system problems |
| <input type="checkbox"/> High blood pressure | <input type="checkbox"/> Chronic breathing conditions |
| <input type="checkbox"/> Heart disease | (e.g., asthma, chronic obstructive pulmonary disease (COPD), chronic bronchitis or emphysema) |
| <input type="checkbox"/> Chronic bowel condition
(e.g., Crohn’s Disease, ulcerative colitis, irritable Bowel Syndrome) | <input type="checkbox"/> Mood or anxiety disorders (e.g., depression, bipolar disorder, a phobia, a panic disorder) |
| <input type="checkbox"/> Stroke | <input type="checkbox"/> Bone and/or joint problems (including arthritis) |
| <input type="checkbox"/> Cancer | <input type="checkbox"/> Prefer not to answer |

10. Do you currently smoke or use tobacco products?

- Yes, daily
- Yes, occasionally
- No, but I used to smoke
- No, never
- Prefer not to answer

11. Are you exposed to second hand smoke in any of the following locations?

Please check all that apply.

	Almost every day	Sometimes	Rarely	Never
Your own home or someone else’s home (i.e., indoor smoke)				
Your own property or someone else’s property (i.e., backyard burning)				
Your own vehicle or someone else’s vehicle				
At your school or workplace				
In public spaces				

12. During the past 12 months, how often did you drink alcoholic beverages?

- Never
- Less than once a month
- Once a month
- Once a week
- 2 to 3 times a week
- 4 to 6 times a week
- Every day
- Prefer not to answer

13. Currently, how many times do you exercise in a typical week?

(i.e., moderate to vigorous activity for at least 30 minutes at a time)

- Less than once a week
- 1 to 2 times per week
- 3 or more times per week
- Daily

14. In a typical day, outside of work, how much time do you spend watching television or videos, playing video games or on a computer or tablet (including playing computer games and using the internet)?

- None
- Less than 1 hour per day
- 1 to 2 hours per day
- 3 to 5 hours per day
- 6 to 10 hours per day
- Over 10 hours per day
- I don't know
- Prefer not to answer

15. In general, do you feel that you get enough sleep/rest?

- Yes
- No

16. FEMALE RESPONDENTS ONLY. If you are a mother, did you breast feed any of your children?

- Yes, for six months or more
- Yes, for less than six months
- No

17. On average, how many fruits and vegetable servings do you eat a day?

(a serving is 1 piece of fruit or a ½ a cup)

- 7 or more servings
- 4 to 6 servings
- Less than 4 servings

18. On average, how often do you eat or drink any of the following items: fruit juice, pop/soda or other sugary drinks, salty snacks, sugary snacks, fast food?

- Never/very rarely
- 1 to 3 times a day
- 4 to 5 times a day
- Over 5 times a day

ACCESS TO HEALTHY OPTIONS AND RESOURCES

19. Which statement best describes your household?

- Often I don't have enough to eat
- Sometimes I don't have enough to eat
- I have enough to eat but not always the kind of food I want
- I always have enough of the kinds of food I want to eat
- I don't know
- Prefer not to answer

20. Do you grow, hunt, or gather your own food?

- Yes
 - No (please describe why not – for example, not interested, lack of access):
-

21. Do you have a regular family doctor?

- Yes
- No
- Prefer not to answer

22. Do you use any complementary or alternative health care providers for your physical or mental health? (e.g., acupuncturist, homeopath, chiropractor, etc.)

- Yes
- No
- Prefer not to answer

23. **FEMALE RESPONDENTS ONLY.** In the past 12 months, have you had any of the following check-ups?

Please check all that apply.

- Pap smear
- Mammogram
- Prefer not to answer

24. **MALE RESPONDENTS ONLY.** In the past 12 months, have you had a prostate exam?

- Yes
- No
- Prefer not to answer

25. Generally, where do you get the healthcare you need? Please check all that apply.

- | | |
|---|--|
| <input type="checkbox"/> Doctor's office (with appointment) | <input type="checkbox"/> Alternative health care provider (please describe): |
| <input type="checkbox"/> Walk-in clinic (with no appointment) | _____ |
| <input type="checkbox"/> Community health center | <input type="checkbox"/> I don't know |
| <input type="checkbox"/> Hospital emergency room | <input type="checkbox"/> Prefer not to answer |
| <input type="checkbox"/> Hospital outpatient clinic | |
| <input type="checkbox"/> Telephone Consultation | |

26. Have you seen a dentist in the last 12 months?

- Yes
- No (please describe why): _____
- Prefer not to answer

YOUR COMMUNITY

27. If you commute to work or school, how long is your commute on an average day?

- _____ minutes
- I don't know
- I do not commute on a regular basis

28. Can you access the following amenities within a 20 minute walk (about one mile, 1.6 km) from your home? Please check all that apply.

- | | |
|---|--|
| <input type="checkbox"/> Groceries (including fresh produce) | <input type="checkbox"/> Schools |
| <input type="checkbox"/> "Third space" (i.e., coffee shop, pub) | <input type="checkbox"/> Recreation centre |
| <input type="checkbox"/> Entertainment (i.e., restaurants, theatre) | <input type="checkbox"/> Church |
| <input type="checkbox"/> Parks and/or natural green spaces | <input type="checkbox"/> Playground |
| <input type="checkbox"/> Library | <input type="checkbox"/> Medical services |
| | <input type="checkbox"/> Social support services |

29. If you use public transit, is it convenient and accessible?

	Yes	No	I don't know	Not applicable (I don't take transit)
Is there a transit stop within a 10 minute walk of your home?				
Do local transit services meet your scheduling requirements?				
Do local transit services/routes get you where you need to go within a reasonable time frame?				

Additional comments about transit in your neighbourhood:

30. Are there safe and accessible bike lanes or paths in your neighbourhood?

- Yes, there are safe and accessible bike lanes and paths
- Yes, there are bike lanes or paths but they are unsafe (please describe key issues):

- Yes, there are bike lanes or paths but they are not convenient to get around (please describe key issues):

- No, there are no bike lanes or paths in my neighbourhood
- This is not relevant for my community

31. Are there safe and accessible pedestrian routes in your neighbourhood?

- Yes, there are safe and accessible pedestrian routes
- Yes, there are pedestrian routes but they are unsafe (please describe key issues):

- Yes, there are pedestrian routes but they are not convenient to get around (please describe key issues):

- No, there are no pedestrian routes in my neighbourhood

32. How safe do you feel your neighbourhood is?

- Extremely safe
- Very safe
- Somewhat safe
- Not very safe
- Not at all safe

33. What would make your neighbourhood feel safer (if anything)?

34. Is it safe to drink the tap water in your community?

- Yes
- No
- I don't know

35. Do you feel that there are environmental issues in your community that impact human or wildlife health? Consider pollutants to the air, soil, and water as well as noise, smell, light, or visual impacts.

36. Do you feel like you have people in your life who can support you when you need help?

- Yes
- No
- Prefer not to answer

37. Do you feel a sense of belonging to your local community?

- Always
- Most of the time
- Sometimes
- Rarely
- Never

38. How often do you participate in activities of a community group such as a church, club, sports team, volunteer organization, or service group?

- More than once a week
- Once a week
- Several times a month
- Once a month or less
- Rarely
- Never

39. How long have you lived in your neighbourhood? _____ years



THANK YOU for your participation!

For more information, please visit us at www.cchn.ca

Or contact Cindy Lise, Regional Facilitator:

cindylisecchn@shaw.ca

Survey results will be posted at www.cchn.ca.

Appendix B: Community Priorities

Community priorities were identified in community workshops and represent a starting point for future discussions and action planning which will further be informed by the findings of this health profile and any additional research.

South Cowichan

- Address the needs of high risk youth, many of whom are slipping through the cracks: Many youth lack access to activities and resources
- Address the needs of people who lack full time, meaningful work and suffer from age discrimination (older workers)
- Improve transportation and mobility choices
- Increase social support for seniors
- Determine if contaminated soils are leaching down into groundwater

City of Duncan

- Every child having equal access to good education and social health
- Promote volunteerism
- Financially support the not for profit sector
- Promote social justice and/or civil society
- Cowichan hospice care clinic (wellness)
- Promote and expand the local food movement and farmers' market
- Continue and enhance cultural connections, intercultural community gatherings, hosted by CIS and Sustainability Cowichan
- Promote the Early Years Centre, Children's Play and Discovery Centre\

- Improve inter-agency and inter-disciplinary collaboration:, Sharing (wealth) of knowledge, resources, capacity
- Improve pedestrian safety, e.g., improve pedestrian walkways
- Provide free non-violent communication classes and public talking circles to reduce conflict and ease loneliness
- Promote Preventative healthcare to prevent crises in physical, emotional, and social well-being

Ladysmith

- Address the service gaps in hospice care (residential hospice, palliative care response team) – i.e., only 3 end-of-life beds to service population of 80,000 in the region
- Provide sustainable funding for programs
- More First Nations culture in town (arts, activities, celebrations)
- Provide jobs for all ages and abilities, but particularly Employment for youth (industry, bike shop, car stereo) and training resources
- Performing arts centre (music, dance, theatre)
- Community volunteer coordinator
- Affordable daycare
- Training/resources (for everyone, but particularly for youth) for entrepreneurs and start-up businesses
- Create a system for community communications (large banners, local papers, magazines, website) that is well utilized – people know where to look for local info/events

- Social support for people with disabilities and seniors – social events, transportation
- Address physical and social Isolation
- Increased cultural inclusion (First Nations)
- Volunteers: coordination, support, honorariums for volunteers to cover food and gas
- Increased community collaboration
- Better local transportation for seniors
- Increase in resource dollars for at-risk individuals
- Education and prevention as a focus
- More users involved in community planning
- Increase access to healthy eating and food
- Include seniors in local youth/child programs and vice versa
- Community contact intake number to navigate services
- Resource dictionary for all programs

Lake Cowichan

- Need licensed child care
- Quarterly meeting of early childhood people
- Parent information fair with resource people presenting
- More communication to families about programs (strategic)
- Increased use of Positive Ticket Program (Police and Cowichan Rec. give tickets to youth for free skate, bowling and curling)
- Open doors for inter-agency cross-sectoral partnerships and planning