THE MUNICIPAL SERVICES COMMITTEE WILL MEET ON MONDAY, AUGUST 14, 2017 6:30 P.M. COUNCIL CHAMBERS, CITY HALL

Mandate –To advise Council on a broad spectrum of issues related to departmental matters

CALL TO ORDER

1. AGENDA APPROVAL

2. MINUTES

2.1. Minutes of the Municipal Services Committee Meeting held July 10, 2017 ..... 1 - 3

3. DELEGATION

3.1. Kate Miller, Cowichan Valley Regional District
Cowichan Valley Regional District's Climate Projections Report ..... 4 - 55

4. REPORTS

4.1. BC Hydro Rates for Streetlights and Select Facilities..... 56 - 59

Staff Recommendation:
That the Committee receive the information regarding BC Hydro rates for streetlights and select facilities.

4.2. Designation as a Bear Smart and/or Fire Smart Community..... 60 - 82

Staff Recommendation:
That the Committee recommend that Council direct staff to continue implementing no cost communication tools for Fire Smart and Wildlife safety awareness and refer consideration of applying for Town of Ladysmith designation as a Bear Smart Community and as a Fire Smart Community to the 2018 budget deliberations.

4.3. Building Inspector's Report to July 31, 2017.....83 - 84

Staff Recommendation:
That the Committee receive the Building Inspector's Reports for the months June to July, 2017.

4.4. Ladysmith Fire/Rescue Reports for April, May and June, 2017.....85 - 87

Staff Recommendation:
That the Committee receive the Ladysmith Fire/Rescue Reports for the months April to June, 2017.

4.5. Coastal Animal Control Services Reports for April, May and June, 2017.....88 - 95

Staff Recommendation:
That the Committee receive the Coastal Animal Control Services Reports for the months April to June, 2017.

5. COUNCIL SUBMISSIONS - None

6. CORRESPONDENCE

6.1. Festival of Lights Society
Request to Build a Permanent Structure Promoting Light Up, Including a Digital Sign to Advertise Local Events..... 96 - 97

Staff Recommendation:
That the Committee recommend that Council refer the Festival of Lights Society's proposal to build a permanent structure promoting Light Up above the "Ladysmith Heritage by the Sea" sign at the north end of Bob Stuart Park to staff for advisement.

7. UNFINISHED BUSINESS

7.1. Ladysmith Sport Facilities, BC Summer Games – Cowichan ..... 98 - 107

Staff Recommendation:
That the Committee recommend that Council:
1. Consider whether the Town would be able to commit to hosting the beach volleyball event at Transfer Beach for the 2018 BC Summer Games, and be responsible for the costs associated with the venue construction; and

2. Should Council wish to commit to hosting the 2018 BC Summer Games beach volleyball events, direct staff to report back to Council with sources of funds to cover the associated costs and to amend the financial plan accordingly.

7.2. Amended Purchasing Policy (Social Procurement) ..... 108 - 128

Staff Recommendation:
That the Committee recommend that Council approve the amended purchasing policy which includes a provision for Social Procurement.

7.3. Low Flush Toilet Rebate ..... 129 - 132

Staff Recommendation:
That the Committee recommend to Council that:

1) Staff update the Toilet Rebate Program to include a varying rebate depending on the water efficiency of the toilet, as:
   a) single 6 litre flush rebate at minimum of $75.00; or a
   b) dual flush 4.1/6 litre rebate at a minimum of $75.00.
2) Confirm the lifetime maximum of 2 rebates per residence or business.
3) Require proof of proper disposal of a 13L or greater toilet.

8. NEW BUSINESS

8.1. Communication and Public Awareness Strategies to Discourage Illegal Dumping of Garbage in the Backcountry (follow up discussion to remarks by Ladysmith Sportsmen's Club representatives)

ADJOURNMENT

MINUTES OF A MEETING OF THE MUNCIPAL SERVICES COMMITTEE MONDAY, JULY 10, 2017 CALL TO ORDER 6:30 P.M. COUNCIL CHAMBERS, CITY HALL

COUNCIL MEMBERS PRESENT:

Councillor Rob Hutchins (chair)	Mayor Aaron Stone	Councillor Steve Arnett
Councillor Cal Fradin	Councillor Joe Friesenhan	Councillor Carol Henderson
Councillor Duck Paterson		

STAFF PRESENT:

Guillermo Ferrero	Erin Anderson	Geoff Goodall
Clayton Postings	Joanna Winter	

CALL TO ORDER

Councillor Hutchins called this Meeting of Council to order at 6:30 p.m.

AGENDA APPROVAL

Moved and seconded:

MS 2017-050

That the agenda for this July 10, 2017 meeting of the Municipal Services Committee be approved.

Motion carried.

MINUTES

Moved and seconded:

MS 2017-051

That the minutes of the Municipal Services Committee meeting held June 12, 2017 be approved as amended to correct a spelling mistake on page two.

Motion carried.

REPORTS

Operating and Capital Budgets – January to May 2017

Staff responded to questions from committee members regarding the Operating and capital Budgets report. Staff confirmed that they will be bringing a report on BC Hydro costs to an upcoming meeting of the committee.

Moved and seconded:

MS 2017-052

That the Committee receive for information the financial report for

the period ending May 31, 2017.
Motion carried.

Social Procurement Policy – Discussion
The Committee discussed options for a social procurement policy for the Town that would provide measurable and tangible criteria to determine community benefit in analyzing bids, tenders and proposals for goods and services

Moved and seconded:
MS 2017-053
That the Committee direct staff to finalize the following proposed list of community benefits to include in a social procurement policy and bring it back for further consideration:

Economy
- Demonstrate job creation within the local area, which is defined as the Cowichan Valley Regional District and the Regional District of Nanaimo.
- Contribute to a stronger local economy (buy local)
- Increase training and apprenticeship opportunities
- Provide work experience and employment opportunities for youth aged 15 to 24
- Ensure that a Living Wage for the local area is paid

Public Spaces
- Enhance community recreation, arts and/or culture infrastructure
- Improve and enhance public spaces
- Improve access to public spaces for people living with disabilities

Environment
- Demonstrate that work undertaken exceeds requirements for environmental standards

Motion carried.

Street Closure Policy – Discussion
Moved and seconded:
MS 2017-054
That the Committee request that Mayor Stone discuss the effects of closing First Avenue for Community festivals and events at an upcoming meeting with the Ladysmith Chamber of Commerce and the Ladysmith Downtown Business Association for feedback.
Motion carried.

Committee members requested specifically that Mayor Stone ask the Ladysmith Chamber of Commerce and Ladysmith Downtown

Business Association to determine the economic impact of festivals and events, and discuss the possibility of holding some events at Spirit Square.

ADJOURNMENT

MS 2017-055

Moved and seconded:
That this meeting of the Municipal Services Committee adjourn at 7:45 p.m.
Motion carried.

CERTIFIED CORRECT:

Chair (Councillor R. Hutchins)

Corporate Officer (J. Winter)

Climate Projections for the COWICHAN VALLEY REGIONAL DISTRICT

CVRD

Acknowledgements

This work was developed as a collaboration between the CVRD and regional stakeholders, as represented in the Phase 1 Technical Committee. The Phase 1 Technical Committee met over six months to review climate projections for the region, discuss regional impacts of the projections, and identify recommendations for Phase 2 of this project. This report and process has also benefited from a variety of external partners including Lillian Zaremba with Metro Vancouver and Amanda Broad at the Capital Regional District. Together the work of our combined local governments will ensure we build on each other's successes.

Contributing authors to this report include Trevor Murdock and Stephen Sobie from the Pacific Climate Impacts Consortium (PCIC), who provided regional downscaled climate projections at locally relevant scales, Kate Miller from the Cowichan Valley Regional District, who acted as the project manager, and Gillian Aubie Vines from Pinna Sustainability, who served as the workshop facilitator and lead writer of this report.

CITE REPORT AS:

Cowichan Valley Regional District. (2017). *Climate Projections for the Cowichan Valley Regional District.* 46 pgs.

PHASE 1 TECHNICAL COMMITTEE

Hamid Hatami, CVRD
Mike Tippett, CVRD
Kate Miller, CVRD
Conrad Cowan, CVRD
Amy Melmock, CVRD
Keith Lawrence, CVRD
Jeff Moore, CVRD
Sybille Sanderson, CVRD
Craig Sutherland, Kerr Wood Leidal
Tom Rutherford, Cowichan Watershed Board
Ken Epps, Island Timberlands
Dominico Iannidinardo, TimberWest
Chris Cole, TimberWest
Lisa Brinkman, Town of Ladysmith
Sharon Horsburgh, Regional District of Nanaimo
Natalie Anderson, Cowichan Tribes
Summer Goulden, Social Planning Cowichan
Michelle Staples, Social Planning Cowichan
Lynne Magee, VIHA
Jade Yehia, VIHA
Stacey Sowa, VIHA
Ian Foss, EMBC
Cathy LeBlanc, MCSCD
Pat Lapcevic, FLNRO
Derek Masselink, MOA
Trevor Murdock, PCIC
Brian Branting, SD 79
Bruce Fraser
Bruce Sampson
Scott Aikenhead
Jane Kilthei
Goetz Schuerholz

Executive Summary

Temperatures in the Cowichan Valley are warming. Global climate models project an increase in annual average temperature of almost 3°C in our region by the 2050s. While that may seem like a small change, it is comparable to the difference between the warmest and coldest years of the past. The purpose of this report is to quantify, with the most robust projections possible, the related climate impacts (including changes to climate extremes) associated with warming. This climate information will then inform regional risk assessment, decision-making, and planning in the Cowichan Valley region, with a goal of improving resilience to climate change. For this reason, this report focusses on the business-as-usual emissions scenario and the 2050s timeframe. By the end of the 21st century, projected warming and associated impacts are even larger. In addition, the amount of warming by that time depends more highly on the quantity of greenhouse gases emitted in the meantime.

Global climate models project an increase in annual average temperature of almost 3°C in our region by the 2050s.

NEW NORMAL COWICHAN

The Cowichan Valley Regional District (CVRD) is currently working on **New Normal Cowichan**: a multi-phased project to take action on climate change. This work involves 4 phases:

Phase 1: Climate Projections and Impacts Analysis

Phase 2: Vulnerability and Risk Assessments

Phase 3: Adaptation and Mitigation Strategy

Phase 4: Implementation of the Strategy

This report completes the Phase 1 climate projections and impacts analysis to support the next two phases of the planning process, by providing climate projections for the region that illustrate the dramatic changes we can expect in years to come. The projections for the Cowichan Valley are based on highest resolution information about future climate available for our region: daily climate model projections from Global Climate Models, statistically downscaled to 10 km resolution, and then elevation corrected using historical gridded climatology at 800 m resolution. This report also identifies high-level impacts for our region, and sets the stage for further exploration planning and prioritization in Phase 2. In addition to the projections presented here, ongoing work to project future sea level rise and increases to water levels are being completed and will be presented in a separate document.

Projections

As our climate warms, our region can expect more than a doubling in the number of summer days above 25°C, from an average of 16 days per year to 39 days per year. The 1-in-20 hottest temperature is projected to increase from 33°C to 37°C by the 2050s. This projected warming has implications for future water and cooling demands, and translates into changes that are important to our ecosystems, watersheds, and communities, including an overall 28% increase in the length of the growing season and a 49% increase in growing degree days regionally. Warmer winters mean the region will experience a 63% decrease in the number of frost days and heating demand will decrease overall, although both high and low temperature extremes are still possible in a less stable climate.

A modest 5% increase in annual precipitation is projected in our region by the 2050s. Projections indicate that fall will see the greatest increase in precipitation. This precipitation is expected during increasingly extreme events, with about 30% more precipitation on very wet days (95th percentile wettest days indicator) and 65% more on extremely wet days (99th percentile wettest days indicator). Despite the projected increased intensity of wet events, the amount of rain in summer is expected to decrease by 17%, and the duration of dry spells will be lengthened by about 20%, from 22 consecutive days to 26 days.

ROGER WILES

Most of the projected climate changes described in this report will be felt more or less uniformly throughout the region. Certain impacts, however, may differ substantially between low-lying developed areas (where the majority of the population is situated), the water supply areas, and the west coast. A sub-regional analysis has been undertaken for each of those areas to assist in local planning initiatives. Past precipitation values are generally wetter in the water supply watersheds and west coast watersheds, while past temperatures are

generally warmer in the developed areas. This is important for temperature indicators like frost days, which illustrate that in the future, only the highest elevations in our region will experience temperatures below freezing. Outcomes from the sub-regional analysis also indicate the wettest areas in the mountains of the west coast will become even wetter, and warmer temperatures will cause more precipitation to fall as rain. April 1 snowpack depth is projected to decrease by 85% by the 2050s.

Regional Collaboration

Preparing for the changes ahead will require provincial and regional governments, local authorities, and agencies to work together in developing a local, regional, and bioregional approach. Emergency preparedness and management will be an increasingly important issue in the planning and delivery of services, programs, and infrastructure. The public will also need to be informed and supported through the range of changes.

Early Recommendations

The technical committee has offered the following early recommendations to be considered as the region continues to prepare and take action on climate change adaptation. Detailed analysis and structured recommendations will follow as a part of the overall adaptation planning exercise.

- Take a "no-regrets" approach when planning for adaptation, as the time for action is now.
- Utilize existing projections in all master planning processes.
- Establish stretch goals and visions in Regional Cowichan 2050 planning process to ensure that adaptation is not an automatic fallback position.
- Incorporate projections and impacts into all engineering and water security planning.
- Conduct additional analysis of drought-related indicators to more fully understand specific impacts to soil, water supply, and ecosystem health at the landscape level.
- Develop long-term community water security plans and update watershed strategies with climate projections to address future conflicts over water use.
- Develop an integrated hydrological monitoring and climate network.
- Identify and map areas affected by increased climate sensitivity (flooding, erosion, landslides) to assist in identifying specific risks.
- Conduct a regional, engineering-based analysis of infrastructure risks to inform asset management.
- Develop IDF curves that reflect climate projections for engineering decision making related to infrastructure.
- Incorporate APEG BC recommendations for additional tolerances above projections.
- Develop sea level rise land use management zones.
- Recognize the rural nature of the region and how this can affect the services provided.
- Work in partnerships with other levels of government to address infrastructure shortages/deficiencies.
- Conduct a full risk assessment of policy and infrastructure in partnership with other levels of government.
- Communicate long-term projections to the general community, stakeholders, and partners, along with other relevant projections concerning sea level rise and forestry http://www.genetics.forestry.ubc.ca/cfcg/BEM.html.

Table of Contents

Introduction

The impacts of climate change are becoming increasingly evident and are challenging all levels of government to develop more resilient communities. Ensuring our region is as prepared as possible is critical to maintaining community well-being, environmental health, and a vibrant local economy over the long term. The 2014–2018 Cowichan Valley Regional District (CVRD) Corporate Strategic Plan has set a mandate to understand our region's climate risks and to complete adaptation plans that strengthen resilience, reduce risks, and take advantage of potentially emerging opportunities.

The first step towards planning is understanding what changes are projected for our region and beginning to build relationships between the community and government to improve our ability to adapt to changes ahead. To support this, the Pacific Climate Impacts Consortium (PCIC) has worked with the CVRD and a multi-stakeholder team to produce high-resolution regional projections to understand how the climate in our region may change by the 2050s and 2080s. This report presents information on temperature, precipitation, and related extreme indicators that, taken together, tell a story of how our climate is expected to change over time. High-level comments on the possible impacts of these changes are also presented as a first step in working collaboratively as a region to understand and prepare for the changes ahead. New approaches to infrastructure, planning processes, and other regional management, require long timelines to change, and this report gives decision makers a clear sign that action is required today to adapt and mitigate further impacts.

The first step towards planning is understanding what changes are projected for our region.

This report offers a general description of our changing climate, followed by an expanded section on precipitation, summer temperatures, and winter temperatures. Each section includes a description of each indicator, along with a summary of the future projected climate. Cases where the results for a particular sub-regional indicator vary substantially from the regional average are noted in the analysis. The second chapter of this report provides a brief narrative describing how these changes could impact our region. These impact themes are broken into the Natural Environment and the Human Environment.

Sea level rise impacts are addressed by utilizing different sea level rise scenarios (1m, 2m, and 3m) along the regions east coast. This work will contribute to and be included in the next phase of the overall "New Normal Cowichan" climate adaption process using detailed coastal mapping.

Information provided in this document is not intended to serve as design guidelines for future planning. Rather it is intended to describe a probable future and enable our region's planners, engineers, policy makers, and community decision makers to make better-informed decisions on how to plan for and adapt to changes ahead.

This report offers a general description of our changing climate, followed by an expanded section on precipitation, summer temperatures, and winter temperatures.

Methodology

Climate Scenario Selection

Various future trajectories of greenhouse gas (GHG) emissions are possible, and depend directly on global political initiatives and socio-economic changes that will occur over the coming years. This report presents the internationally recognized roughly "business as usual" GHG emissions scenario, known as Representative Concentration Pathway 8.5 (RCP8.5). Additional information from lower emissions scenarios (RCP4.5 and RCP2.6) is available for sensitivity analysis and to illustrate the relationship between adaptation and GHG emissions reductions (by request).

In general terms, RCP8.5 corresponds to "business as usual" GHG emissions for the remainder of the century. The RCP4.5 "medium stabilization" scenario represents mitigation efforts that result in about half of the emissions compared to the RCP8.5 scenario. Substantial and sustained reductions in GHG emissions—for example, extensive adoption of biofuels and vegetarianism, along with carbon capture and storage—would be required to achieve RCP2.6, which is the only pathway that would keep global warming below 2°C above pre-industrial temperatures. The projected global temperature change for each pathway is illustrated below.

To date, public policy continues to reflect the RCP8.5 pathway, even though recent aspirational goals, including the 2015 COP21 Paris Agreement, correspond with RCP2.6. It is prudent to plan for an RCP8.5 future until global mitigation actions begin to catch up with commitments.

Representative Concentration Pathways (RCPs)

RCPs describe potential 21st century scenarios of GHG emissions, atmospheric GHG concentrations, aerosols, and land use. These RCPs are used for making projections, and are based on the factors that drive anthropogenic GHG emissions: population size, economic activity, lifestyle, energy use, land use patterns, technology adoption, and climate policy. Each of the RCPs directly relates to the choices made by global society.

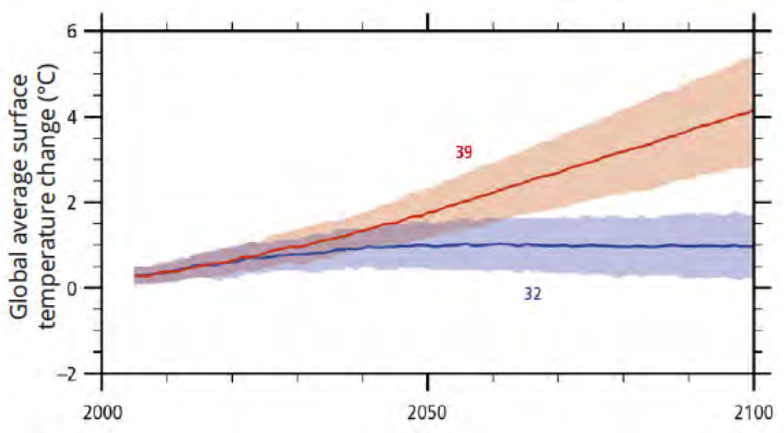


Figure 1: Emissions Scenarios *Figure S SPM.6(a) from IPCC's Climate Change 2014 Synthesis Report shows modeled global average surface temperature change relative to 1986-2005. The mean of the projections (lines) and a measure of uncertainty (shading) are shown for RCP8.5 (red) and RCP2.6 (blue). The number of climate models used to calculate the mean is indicated.*

Climate Model Selection

Many different, highly sophisticated models are used to simulate how the earth's climate will respond to changes in GHG concentrations, each with different strengths and weaknesses. To manage the uncertainty associated with modelling, it is best practice to apply an "ensemble" approach that uses several models to describe the bounds of projected climate change.

The results in this report are based on a subset of climate models selected from the Coupled Model Intercomparison Project 5 (CMIP5). The CMIP5 climate models were first screened according to their ability to replicate historical data, and from them, the ensemble of 12 models was chosen to provide the widest range of projected change for a set of climate parameters.

It is best practice to apply an "ensemble" approach that uses several models to describe the bounds of projected climate change.

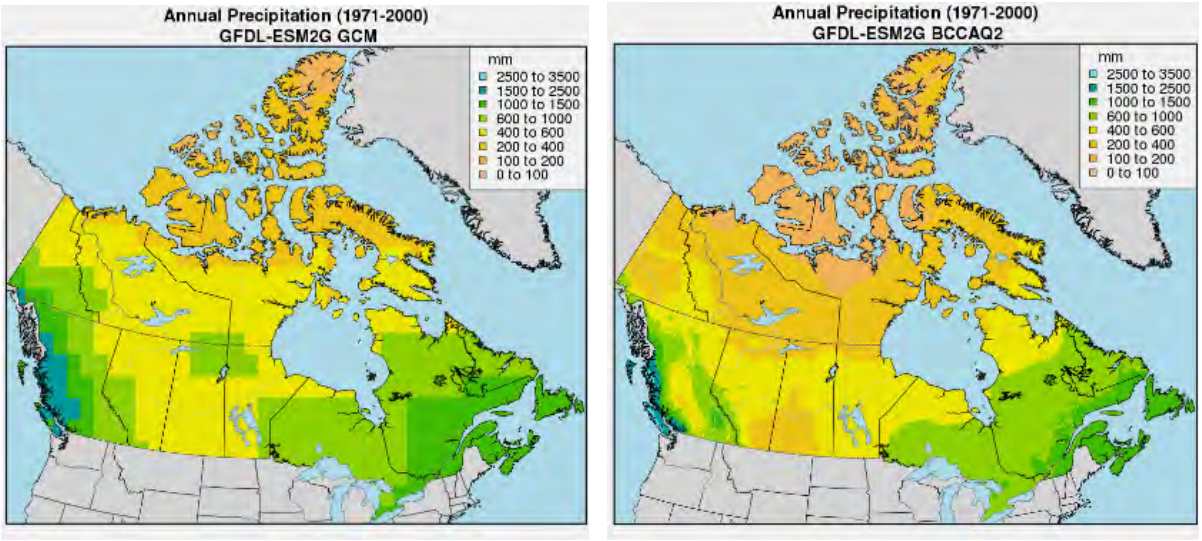


Figure 2: Example of Improved Resolution from Downscaling Climate Models *Climatalogical precipitation for the 1971–2000 period as simulated by the GFDL model, and after applying BCCAQ.*

Acronyms

ANUSPLIN	Australian National University Spline
BCCAQ	Bias Correction/Constructed Analogues with Quantile mapping reordering
CMIP5	Coupled Model Intercomparison Project 5
ETCCDI	Expert Team on Climate Change Detection and Indices
GFDL	Geophysical Fluid Dynamics Laboratory
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change

Information from the large-scale global climate models was translated into predictions at local scales using a procedure called downscaling. The model projections were downscaled to a 10 km grid by making use of a historical daily time series (ANUSPLIN) in conjunction with the climate model projections. BCCAQ statistical downscaling was used, which is a hybrid climate analogue/quantile mapping method. Daily temperature and precipitation observations and future projections at 10 km resolution were then draped over an 800 m grid (PRISM) of 1971–2000 average temperature or precipitation to generate high-resolution maps.

Indicator Derivation

The historical baseline period used for all indicators in the report is 1971–2000. Values are averaged over this 30-year period to smooth out annual variability. The future projections are for the 2020s, 2050s (which is an average of modelled values over the 2041–2070 period), and 2080s (averaged over the 2071–2100 period). The three RCP scenarios have somewhat similar GHG concentrations in the 2050s, but diverge considerably by the 2080s. Indicators of climate change take a similar divergent pattern by the 2080s.

Many of the indicators of extreme events used in this report are derived using the definitions recommended by the Expert Team on Climate Change Detection and Indices (ETCCDI), known as the CLIMDEX indices. The indicator names used in this report have been translated into plain language. Some indicators are defined by ETCCDI on a monthly basis only, such as TXx (monthly maximum daytime high temperature). In some cases, we consider seasonal and annual versions of CLIMDEX indices by taking the corresponding maximum (or minimum) from the highest (or lowest) month in that season or year. The values given as projected changes for the 2050s and 2080s in this report are the average values across all 12 models.

Sub-Regional Analysis

The higher elevations and rain shadow effect from the mountainous regions result in considerable variation in climatic conditions across our region. For example, the west coast of the region receives over three times the annual precipitation compared to the east coast. In order to account for sub-regional variation in climate change, projections for the various indicators have been summarized both for the region as a whole and for three sub-regions. Cases where the results for a particular indicator vary substantially from the regional average are noted in the analysis. These sub-regions were defined using watershed and sub-watershed boundaries to reflect efforts at watershed-based planning within the region. The three sub-regions are defined as follows (also see Figure 3: Sub-Regions):

Developed Area: This sub-region includes the smaller, eastward-flowing watersheds and coastal benchland areas in which the majority of the region's population is located. For the larger Cowichan, Chemainus, and Koksilah River watersheds, only the lower sub-basins are included in this sub-region.

Water Supply Watersheds: This sub-region includes the upper portion of the sub-basins for the Cowichan, Koksilah, and Chemainus River watersheds and consists mainly of resource lands within the privately managed forest landbase.

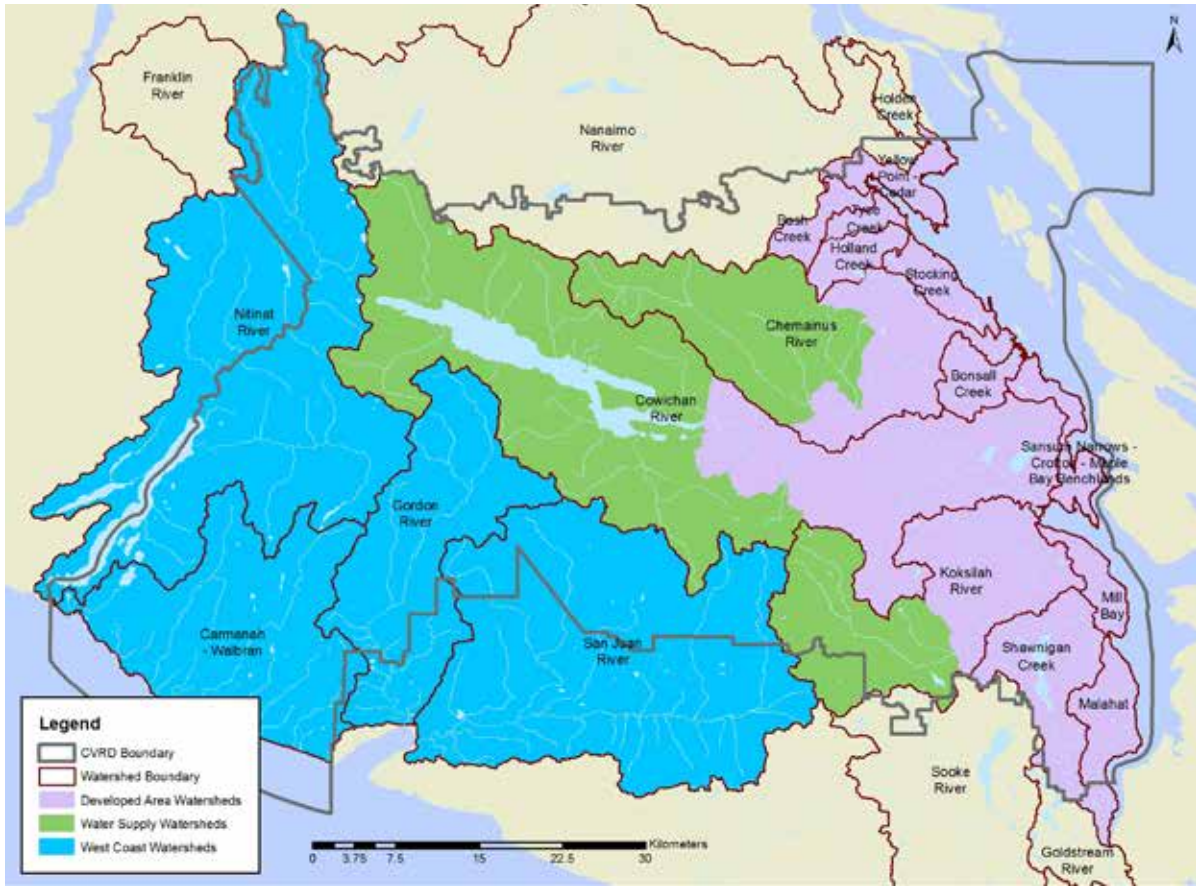


Figure 3: Subregions

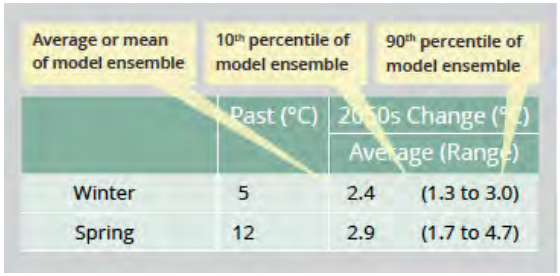
West Coast Watersheds: This sub-region includes the very wet, west-flowing watersheds, which include a mix of parks and resource lands.

While this work provides projections at the regional and sub-regional level, future work will need to consider the impacts of projected climate change and the responses to those impacts at a much finer scale. Differences in hydrological, ecological, social, and other conditions at a watershed or sub-watershed level will play a significant role in determining the extent and nature of the impacts of the projected climate change and the appropriate adaptations to those impacts over time.

How to Read Figures

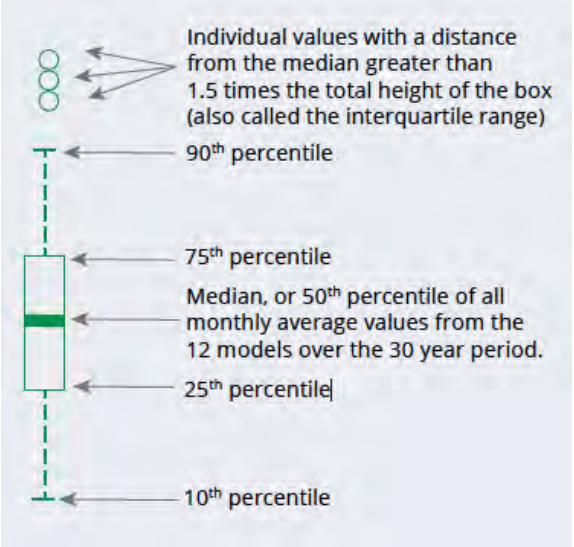
The following methods were used when developing the values shown in the tables, maps, and plots in this report:

- Values for each time period (past, 2050s, and 2080s) are averaged over each 30-year period. The 30-year period used to calculate past values is 1971–2000; the 2050s refer to 2041–2070, and the 2080s refer to 2071–2100.
- Seasons are presented as winter (December-January-February), spring (March-April-May), summer (June-July-August), and fall (September-October-November).
- In tables throughout the document, projected change is given for the average of the model ensemble along with the range (10th to 90th percentile) of the model ensemble. The 10th to 90th percentile range describes the uncertainty among the models and natural climate variability.



- Values in the tables (averages, ranges, percentiles, etc.) are provided for the region as a whole, as well as for the sub-regional geographies where relevant.
- Maps show only the average values of the model ensemble. Maps are provided in the body of the report when they add meaning to data interpretation, with additional maps for remaining indicators presented in Appendix 2.
- For the 1-in-20 events described in this report, the "5% chance of occurrence" is based on an average over each 30-year period. This means that, since climate change will occur throughout that time, there is slightly less than a 5% chance of such an event occurring at the beginning of the period and more than 5% chance at the end of the period, with an average 5% chance per year over the period.

- This report provides several box-and-whisker plots to illustrate year-to-year and model-to-model variability over time. The diagram below illustrates how these plots are to be interpreted.



General Climate Projections

The Cowichan Valley Regional District is already seeing the impacts of climate change and can expect to see increased changes and interrelationships in the years to come. At a broad level, this will mean the following physical changes:

- Warmer temperatures
- Longer dry spells in summer months
- More precipitation in fall, winter, and spring
- A decrease in snowpack
- More intense extreme events

These changes will not always happen consistently over the region or over time because seasonal and annual variations will occur. For most variables, projected change appears somewhat different from the past by the 2050s, and by the 2080s, projections indicate substantial changes, resulting in a very different climate than in the Cowichan region of today. This is particularly true for the temperature-related variables.

This section of the report presents general projections for our region, and is followed by sections with more detailed climate indicators, including indices of extremes for precipitation, summer temperatures, and winter temperatures. Each section includes a definition of the indicator and a summary of projected values.

A Note on Interpretation

This report tells the story of how we can expect temperature and precipitation to change in the Cowichan Valley region. When reviewing the data provided in the tables and figures below, it is important to note the following:

- The 10th to 90th percentile values projected by the ensemble models are important for adaptation planning, as they take into account the range of uncertainty when projecting future climate change. Risk managers may find it appropriate to consider 90th percentile values when planning critical infrastructure investments.

- For some indicators, values for specific geographic areas may be more appropriate than the regional or sub-regional averages presented in the tables. These values can be obtained by looking at the maps presented in the report body or utilizing the associated GIS files.

Warmer Temperatures

ABOUT THIS INDICATOR

Daytime high and nighttime low are averaged over each month, each season, or annually in the tables and plots below.

PROJECTIONS

All models project that daytime high and nighttime low temperatures will rise. While temperature can be expected to increase year round, the greatest increases will occur in the summer months. By the 2050s, daytime high temperatures will be substantially warmer (an increase of 3.2°C on average) in summer. By the 2080s, we can expect summer daytime highs to increase by over 5°C.

Nighttime lows are also projected to warm by almost 3°C in all seasons by the 2050s. In winter, this will mean an average low of 2°C by the 2050s, compared to an average low of -0.6°C in the past, increasing to about 4°C by the 2080s. Summer nighttime lows are also projected to increase dramatically, from 9°C in the past to over 14°C by the 2080s. Similar changes are also seen in each of the three sub-regions.

TABLE 1: REGIONAL AVERAGE DAYTIME HIGH TEMPERATURE

	Past (°C)	2050s Change (°C)		2080s Change (°C)	
		Average	(Range)	Average	(Range)
Winter	5	2.4	(1.3 to 3.3)	4.4	(2.6 to 6.4)
Spring	11	2.7	(1.5 to 4.6)	4.3	(2.7 to 7.1)
Summer	20	3.2	(1.9 to 4.2)	5.2	(3.6 to 7.0)
Fall	13	2.6	(1.3 to 3.8)	4.2	(2.8 to 5.8)
Annual	12	2.7	(1.4 to 4.0)	4.5	(2.9 to 6.2)

TABLE 2: REGIONAL AVERAGE NIGHTTIME LOW TEMPERATURE

	Past (°C)	2050s Change (°C)		2080s Change (°C)	
		Average	(Range)	Average	(Range)
Winter	-1	2.6	(1.6 to 3.2)	4.4	(3.2 to 5.3)
Spring	2	2.5	(1.7 to 3.6)	4.1	(2.8 to 5.8)
Summer	9	2.8	(1.7 to 4.0)	4.7	(3.4 to 6.5)
Fall	5	2.6	(1.6 to 3.7)	4.2	(2.8 to 5.6)
Annual	4	2.6	(1.6 to 3.6)	4.3	(3.0 to 5.8)

Maps indicate that warming is expected to be relatively uniform throughout the region, with the most warming expected in the valleys and low-lying areas. In the past, the average winter nighttime low temperature was below freezing. In future, only the highest elevations will experience nighttime lows below freezing.

Warmer Temperatures, Continued

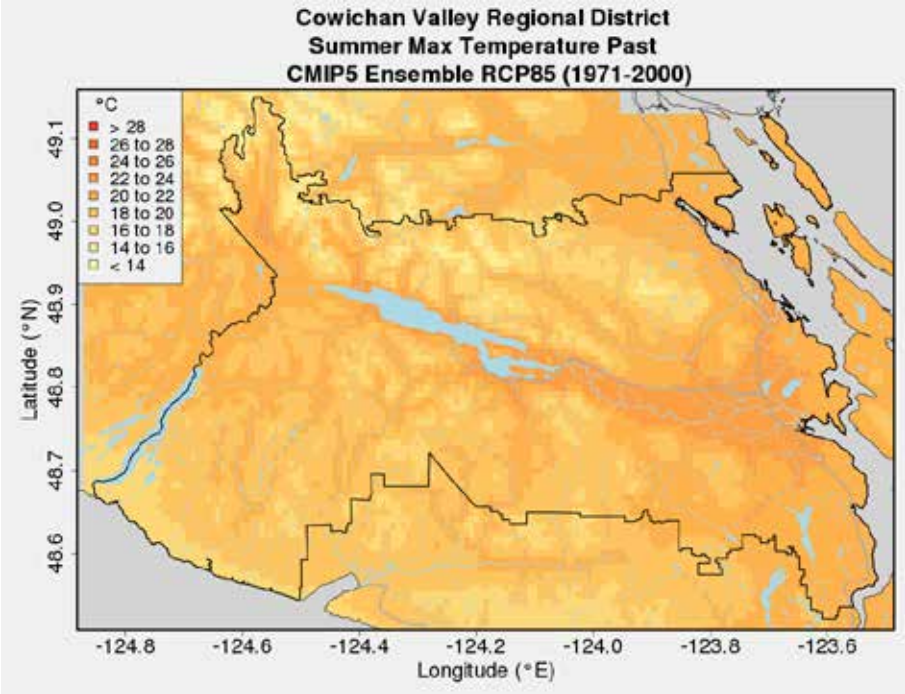


Figure 4: Summer Average Daytime High Temperature – Past

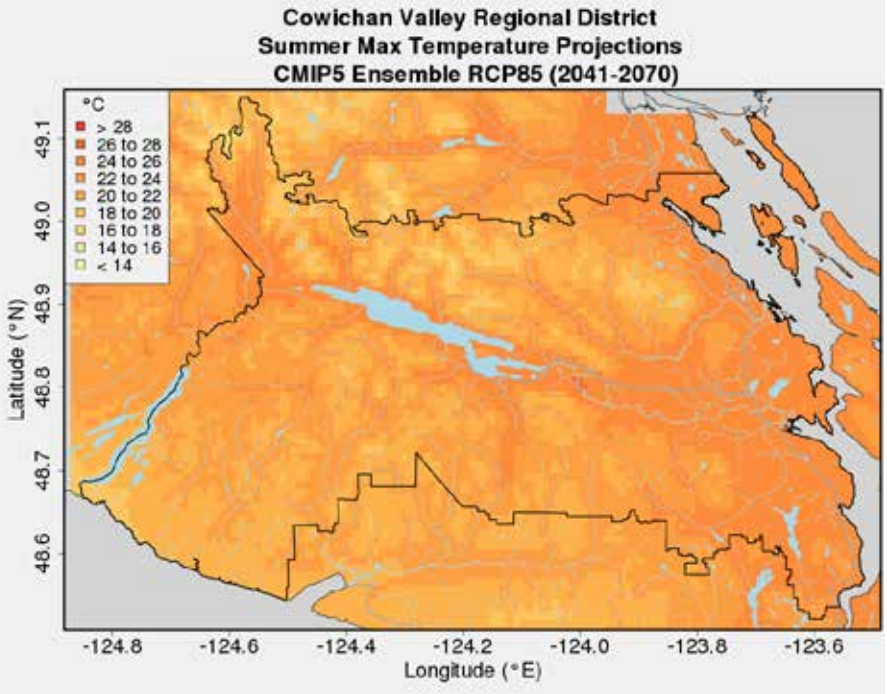


Figure 5: Summer Average Daytime High Temperature – Future (2050s)

Warming is expected to be relatively uniform throughout the region, with the most warming expected in the valleys and low-lying areas.

Warmer Temperatures, Continued

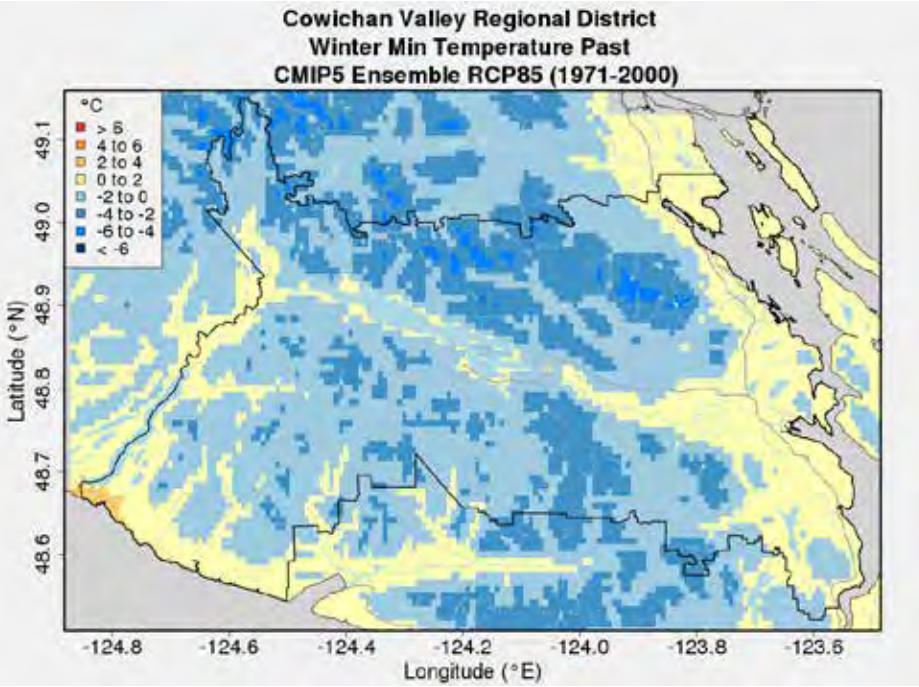


Figure 6: Winter Average Nighttime Low Temperature – Past

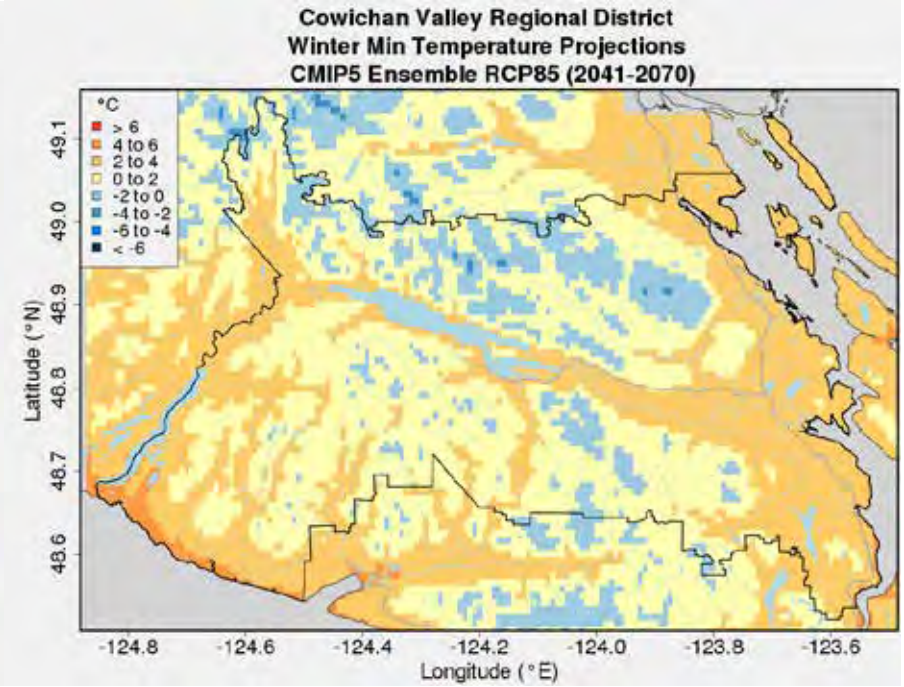


Figure 7: Winter Average Nighttime Low Temperature – Future (2050s)

In the past, the average winter nighttime low temperature was below freezing. In future, only the highest elevations will experience nighttime lows below freezing.

Seasonal Variability in Temperature

The box-and-whisker plots of monthly daytime high and nighttime low temperatures provide a comparison of the year-to-year variability in future to that experienced in the past. This shows that the new normal for the region may be very unlike the past.

The daytime high temperature plot shows that the median daytime high in the 2080s are projected to be hotter than the 90th percentile of warm days in the past in many months and even by the 2050s in some months, with the most notable changes projected for July, August, and September. In the 2080s, most September temperatures can be expected to be hotter than past August temperatures. In the 2080s, January daytime highs are projected to be generally warmer than past March temperatures.

NOTE:

Further explanation of how to read the box-and-whisker plots is provided on page 7 under Methodology.

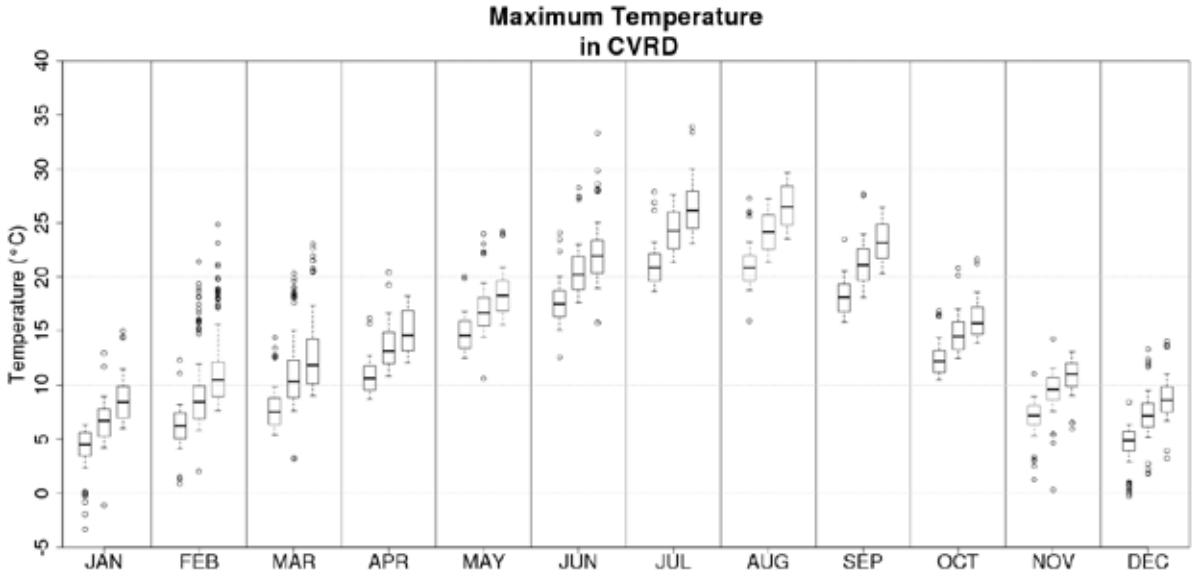


Figure 8: Monthly Daytime High Temperature – Past, 2050s, and 2080s

Boxes from left to right in each month indicate past, 2050s, 2080s.

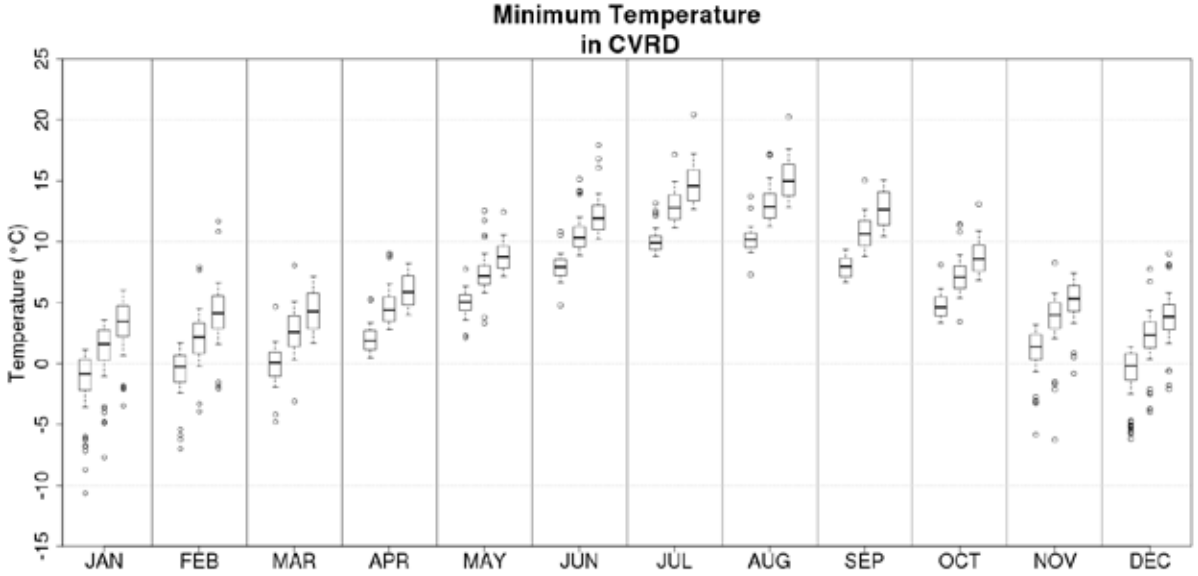


Figure 9: Monthly Nighttime Low Temperature – Past, 2050s, and 2080s

Boxes from left to right in each month indicate past, 2050s, 2080s.

Wetter Winters, Drier Summers

ABOUT THIS INDICATOR

Total precipitation is all precipitation summed over a month, season, or year, including rain and snow water equivalent. This is a high-level indicator of how precipitation patterns can expect to change.

PROJECTIONS

Projections indicate that our region will experience a modest increase in total annual precipitation of 5% by the 2050s and 11% by the 2080s. While these increases alone are not a dramatic departure from the past, the increase in precipitation is expected to be distributed unevenly over the seasons and among extreme events.

Most rain in our region falls over the winter months, and this is projected to continue to occur in the future. The largest percentage increase in rainfall is expected to occur in the fall season, increasing 11% by the 2050s, and 19% by the 2080s. Models indicate winter and spring precipitation will both increase as well. Summer, already our region's driest season, may experience a decline of 17% by the 2050s, and a decline of 26% by the 2080s. While the models indicate a range of possible change, they mostly agree about the direction of change for each season.

TABLE 3: TOTAL PRECIPITATION OVER SEASONS IN A YEAR

	Past (mm)	2050s (mm)	2080s (mm)	2050s Percent Change (%)		2080s Percent Change (%)	
				Average	(Range)	Average	(Range)
Winter	818	856	932	5	(-2 to 11)	14	(2 to 26)
Spring	413	433	442	5	(-6 to 13)	7	(-5 to 17)
Summer	158	131	117	-17	(-41 to 2)	-26	(-49 to -6)
Fall	612	676	727	11	(-3 to 25)	19	(6 to 38)
Annual	2028	2124	2250	5	(1 to 10)	11	(2 to 16)

Wetter Winters, Drier Summers, Continued

The main distinction between the regional and sub-regional numbers is that the baselines for precipitation are different. The seasonal percent changes are similar throughout the region.

By the 2080s, summer precipitation in the Water Supply Watersheds are expected to be similar to summer precipitation in the Developed Area today. Conversely, by the 2080s, winter precipitation in the Water Supply Watersheds will look like winter precipitation in the West Coast Watersheds today. This is important when planning for stormwater management and flood control.

The maps on the following pages show the amount of precipitation projected, and indicate that the wetter areas are expected to experience the largest increases in precipitation.

TABLE 4: SUB-REGIONAL SEASONAL PRECIPITATION

	Developed Area			Water Supply Watersheds			West Coast Watersheds		
	Past (mm)	2050s Change (mm)	2080s Change (mm)	Past (mm)	2050s Change (mm)	2080s Change (mm)	Past (mm)	2050s Change (mm)	2080s Change (mm)
Winter	612	27 (-14 to 68)	88 (12 to 163)	857	40 (-21 to 93)	119 (17 to 221)	968	47 (-24 to 101)	136 (20 to 248)
Spring	279	16 (-17 to 40)	24 (-11 to 60)	435	21 (-25 to 55)	31 (-19 to 76)	506	23 (-27 to 63)	33 (-27 to 81)
Summer	109	-20 (-44 to 3)	-29 (-56 to -5)	169	-30 (-67 to 3)	45 (-84 to -12)	186	-31 (-74 to 6)	-47 (-91 to -11)
Fall	429	48 (-20 to 11)	89 (32 to 174)	649	67 (-20 to 158)	121 (40 to 236)	736	75 (-19 to 181)	134 (46 to 258)
Annual	1514	74 (-10 to 148)	179 (42 to 264)	2126	102 (11 to 220)	234 (53 to 333)	2403	115 (20 to 262)	257 (52 to 358)

Wetter Winters, Drier Summers, continued

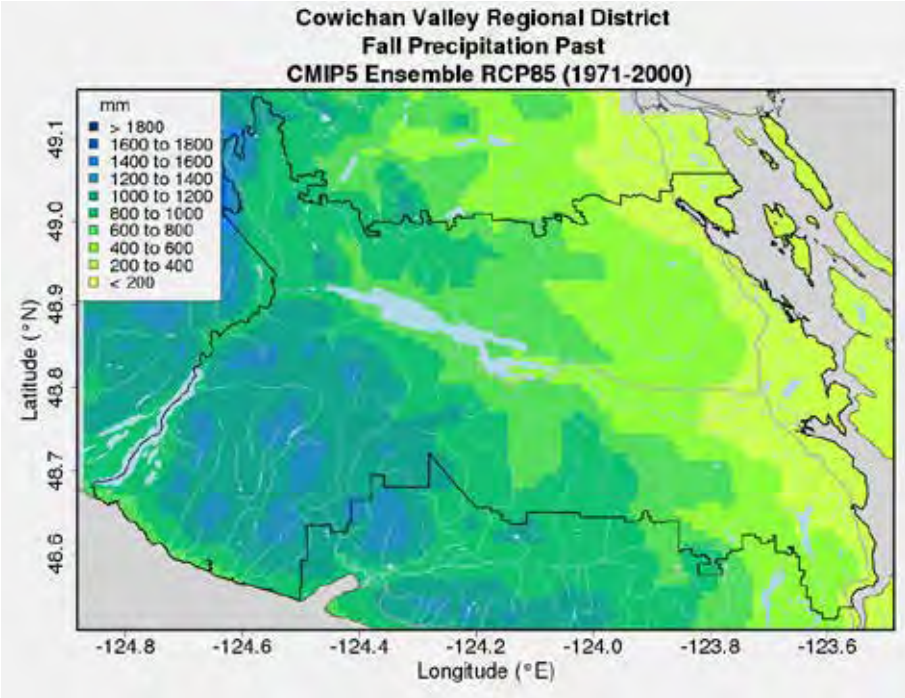


Figure 10: Fall Precipitation – Past

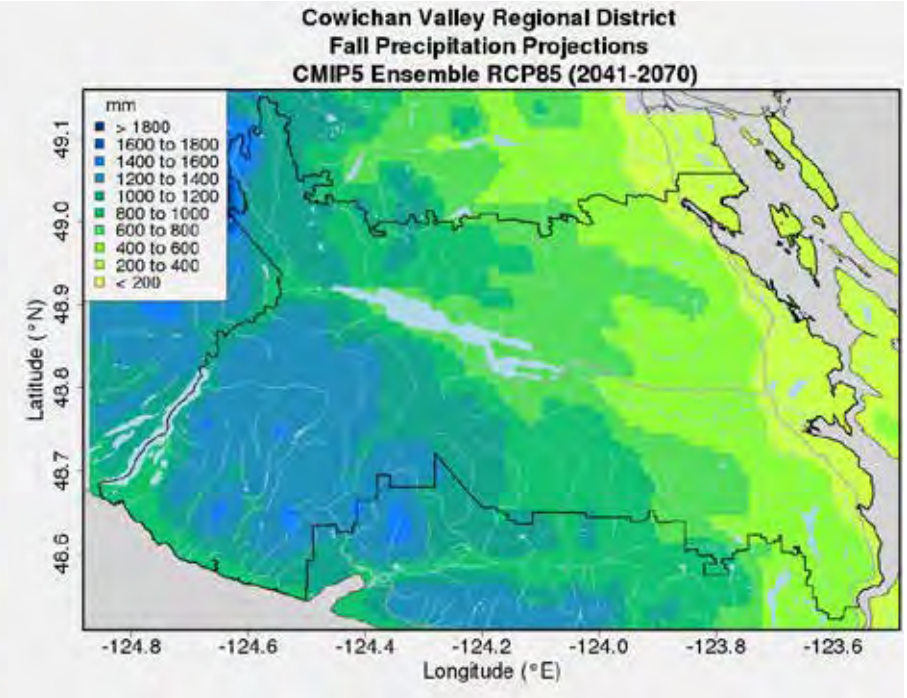


Figure 11: Fall Precipitation – Future (2050s)

Wetter areas are expected to experience the largest increases in precipitation.

Seasonal Variablility in Precipitation

When examining monthly precipitation values in the plot below, we see that the increases within a season are not uniform across months. For example October, November, and December show the largest precipitation increases in both absolute and relative terms. The plot also indicates the potential for drier summer months in the future. September is projected to get drier over time, extending the dry season into fall.

The models illustrate that we can expect more precipitation in the already wet seasons, less precipitation in already dry summers, and considerably more rain falling in some years, while other years will experience droughts.

In southwestern BC, year-to-year precipitation variability is modulated by the Pacific Decadal Oscillation (PDO), which has varied between warm and cool phases a few times over the last century. As well, the El Niño-Southern Oscillation (ENSO) varies between three phases: neutral years, El Niño events that typically mean a warmer and drier winter and spring, and La Niña events that are cooler and wetter.

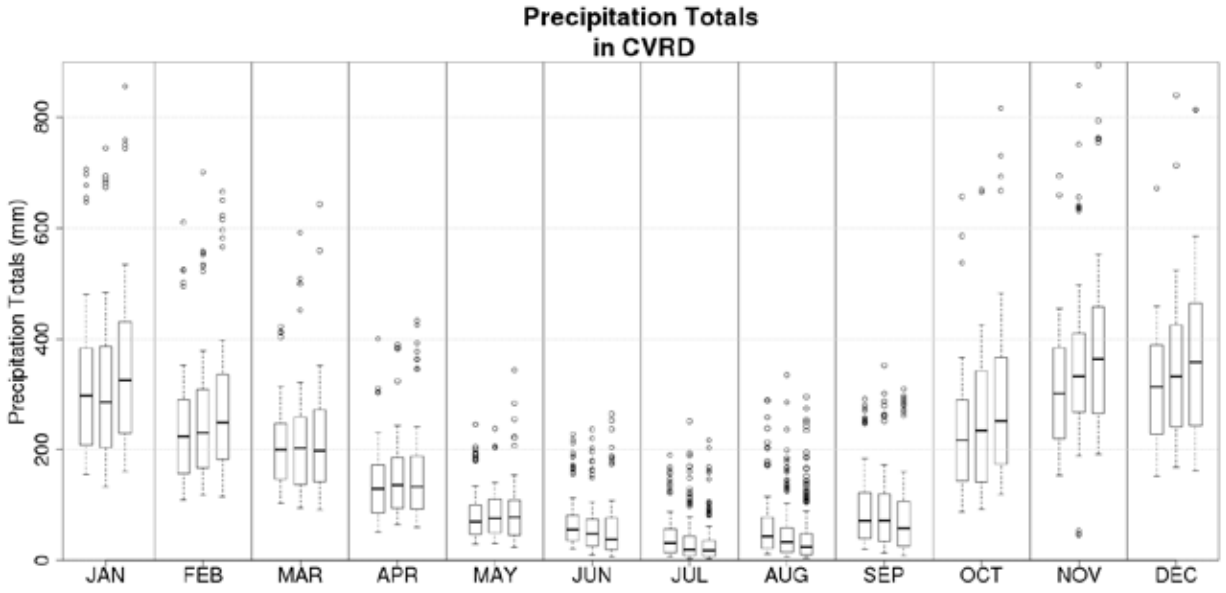


Figure 12: Monthly Total Precipitation – Past, 2050s, and 2080s

Boxes from left to right in each month indicate past, 2050s, 2080s. Further explanation of how to read the box-and-whisker plots is provided above in the Methodology section (page 7).

The range of the natural variability of PDO and ENSO cycles is comparable to the projected changes due to climate change. Because future projections are based on 12 model runs, the values in the tables approximate average conditions in terms of natural variability.

To illustrate the influence of year-to-year variability (including ENSO and PDO contributions) on precipitation, the box and whisker plots below show, for each month of the year, the distribution of values in each 30-year period for all 12 models. As natural variability will still exist in future and projected changes are superimposed on variability, individual precipitation events that are more intense than those experienced in the past are expected to occur.

Precipitation Indicators

Our region's drinking water, as well as water for industry and agriculture, comes from a variety of sources including lakes, rivers, and groundwater. Some utilities in the region have reservoirs, but these are small and have limited capacity for additional storage. Changes in precipitation patterns will have impacts on surface water availability, lake and river system levels, and ultimately on groundwater resources. Changes in precipitation will also have impacts on water quality, both in winter due to increasing sedimentation, and in summer due to algal events driven by water temperature and levels.

The majority of the region outside of municipal boundaries relies on natural drainage infrastructure (wetlands, watercourses, and floodplains) to withstand extreme weather events. The region's network of roads and drainage systems, operated by the provincial Ministry of Transportation and Infrastructure and the municipalities, was designed to withstand past rainfall patterns. As the climate warms, more moisture is held in the atmosphere and released during precipitation events, resulting in more intense future storm events. Also, with changing global climate patterns, weather systems like atmospheric rivers are likely to stall on the coast and, when combined with an increased precipitation intensity, we can expect

to see longer and more intense storm events coming off the Pacific in the future. During these events, new thresholds for extreme weather events are likely to challenge the capacity of the regional sewerage and drainage infrastructure currently in place[1].

We can expect to see longer and more intense storm events coming off the Pacific in the future.

1 For more information, see: https://www.pacificclimate.org/sites/default/files/publications/Atmospheric%20Report%20Final%20Revised.pdf

Dry Spells

ABOUT THIS INDICATOR

Dry spells is a measure of the number of consecutive days where daily precipitation is less than 1 mm. The value denotes the longest stretch of dry days in a year, typically in summer. This indicator reflects times of the year when watersheds/water resources are not recharged by rainfall.

PROJECTIONS

The past average longest period of consecutive days without rain (under 1 mm) in our region is 22 days. Dry spells on average are expected to increase to 26 days by the 2050s, and 29 days by the 2080s. Sub-regional trends align with regional trends.

Single-Day Maximum

ABOUT THIS INDICATOR

Single-day maximum precipitation describes the largest amount of rain that falls on any single day in the year.

PROJECTIONS

As noted previously in the General Climate Projections section, a modest increase (5%) in total annual precipitation is expected by the 2050s. Models project that the increase will be concentrated into the wettest days. The wettest single day of the year is expected to see 17% more rain by the 2050s, and 30% more by the 2080s. The percent changes are similar across the sub-regions. Like the general precipitation numbers, the baseline values for single-day maximum precipitation in the sub-regions are different, while the future percent changes are in line with regional averages.

5-Day Maximum

ABOUT THIS INDICATOR

5-day maximum precipitation describes the largest amount of rain that falls over a period of 5 consecutive days in the year.

PROJECTIONS

Again, as noted earlier, a modest increase (5%) in total annual precipitation is expected by the 2050s, with models projecting the increase will be concentrated into the wettest days. The amount of rain in the wettest 5-day period is projected to increase by 10% by the 2050s, and 23% by the 2080s. Sub-regional percent changes are in line with the regional projections.

TABLE 5: ANNUAL DRY SPELLS

	Past (days)	2050s (days)	2080s (days)	2050s Percent Change (%)		2080s Percent Change (%)	
				Average	(Range)	Average	(Range)
Dry spell duration	22	26	29	20	(4 to 36)	32	(16 to 48)

95th-Percentile Wettest Days

ABOUT THIS INDICATOR

The 95th-percentile wettest days precipitation indicator points to the total amount of rain that falls on the wettest days of the year, specifically on days when precipitation exceeds a threshold set by the annual 95th percentile of wet days during the baseline period (1971–2000). This measure indicates how much total annual precipitation falls during these heavy events, which is a combination of both how often these events occur and the size of these events.

PROJECTIONS

The wettest periods in our region are projected to become wetter. The wettest days that exceed the baseline 95th-percentile threshold are projected to produce 30% more rain by the 2050s, and 57% more rain by the 2080s. Most of this increase in rain is due to those heavy rain days becoming more frequent in the future. Sub-regional percent changes are in line with the regional projections.

TABLE 6: EXTREME PRECIPITATION

	Past (mm)	2050s Percent Change (%)		2080s Percent Change (%)	
		Average	(Range)	Average	(Range)
Single-day maximum precipitation	75	17	(4 to 28)	30	(10 to 40)
Five-day maximum precipitation	177	10	(3 to 20)	23	(8 to 33)
95th-percentile wettest days precipitation	448	30	(9 to 57)	57	(36 to 81)
99th-percentile wettest days precipitation	134	65	(26 to 107)	120	(59 to 161)
1-in-20 wettest day	112	30	(11 to 45)	39	(22 to 57)

99th-Percentile Wettest Days

ABOUT THIS INDICATOR

The 99th-percentile wettest days precipitation indicator points to the total amount of rain that falls on the wettest days of the year, specifically on days when precipitation exceeds a threshold set by the annual 99th percentile of wet days during the baseline period (1971–2000). This measure indicates how much total annual precipitation falls during these heavy events, which is a combination of both how often these events occur and the size of these events.

PROJECTIONS

More precipitation is expected to fall during the 99th-percentile wettest days extreme storm events in the future. Larger 99th-percentile wettest days events could mean up to 65% more rain by the 2050s, and 120% by the 2080s. These projected large increases mean that we can expect more frequent and more intense storms in the future, with more rain falling during extreme downpours. Sub-regional percentile changes are in line with the regional projections.

1-in-20 Wettest Day

ABOUT THIS INDICATOR

The 1-in-20 wettest day is the day so wet that it has only a 1-in-20 chance of occurring in a given year. That is, there is a 5% chance in any year that a 1-day rainfall event of this magnitude will occur. This indicator is useful when planning for future infrastructure and forest production.

PROJECTIONS

More precipitation is expected to fall during the 1-in-20 (or 5% chance) wettest day extreme storm events in the future. 1-in-20 wettest day events could be about 30% more intense by the 2050s, and almost 40% by the 2080s. Sub-regional projections indicate that the wetter areas will become increasingly wetter over time, and indicate we should expect year-to-year variability in precipitation levels.

TABLE 7: EXTREME PRECIPITATION IN THE SUB-REGIONS

	Developed Area			Water Supply Watersheds			West Coast Watersheds		
	Past (mm)	2050s Change (mm)	2080s Change (mm)	Past (mm)	2050s Change (mm)	2080s Change (mm)	Past (mm)	2050s Change (mm)	2080s Change (mm)
Single-day maximum precipitation	61	10 (2 to 19)	18 (6 to 28)	79	14 (2 to 24)	24 (8 to 35)	87	15 (4 to 26)	25 (11 to 34)
Five-day maximum precipitation	139	14 (5 to 29)	33 (8 to 47)	186	20 (4 to 37)	43 (14 to 60)	206	22 (7 to 38)	45 (11 to 34)
95th-percentile wettest days precipitation	329	96 (16 to 185)	193 (129 to 277)	471	139 (44 to 263)	265 (168 to 371)	536	158 (54 to 296)	297 (2015 to 410)
99th-percentile wettest days precipitation	100	63 (26 to 105)	123 (59 to 182)	141	87 (38 to 144)	166 (92 to 219)	158	101 (50 to 163)	183 (107 to 231)
1-in-20 wettest day precipitation	95	23 (8 to 41)	34 (13 to 52)	118	38 (11 to 59)	49 (27 to 70)	128	42 (21 to 60)	48 (30 to 69)

Summer Temperature Indicators

The downscaled outputs from the climate models project warming in average summer (June-July-August) daytime high temperatures. While warmer temperatures may have benefits and be welcomed in some ways, they will also need careful consideration when planning for a growing population in the region. Descriptions of these indicators are offered below, and values for these projections are given in Table 8: Hot Summer Indicators. Sub-regional numbers illustrate that temperatures are generally warmer in the Developed Areas, and cooler in the West Coast Watersheds, while projected changes are relatively uniform across the region. Sub-regional values are given in Table 9: Hot Summers in the Sub-Regions. These indicators are useful when planning for agriculture, and for understanding how ecological systems will change over time, including fish productivity and plant growth.

Summer Days

ABOUT THIS INDICATOR

Summer days tells us how many days reach temperatures over 25°C in any one year. This measure indicates how often we can expect "summer weather" to occur in the future.

PROJECTIONS

In the past, our region experienced 16 "summer days" a year, and we can expect significantly more in the future. Models project more than double the number of summer days by the 2050s, and more than triple by the 2080s. This means that future summers may have 39 days above 25°C by the 2050s, and 59 days by the 2080s. The Developed Area, where the majority of the population is concentrated, experienced 23 summer days in the past. By the 2050s, 54 summer days a year are projected, and 78 by the 2080s. This marks a significant change from the past.

The map for summer days included below shows that the number of hot days are projected to be highest in the eastern reaches of our region, with the greatest changes in the Developed Area with the most population that already experiences warmer temperatures.

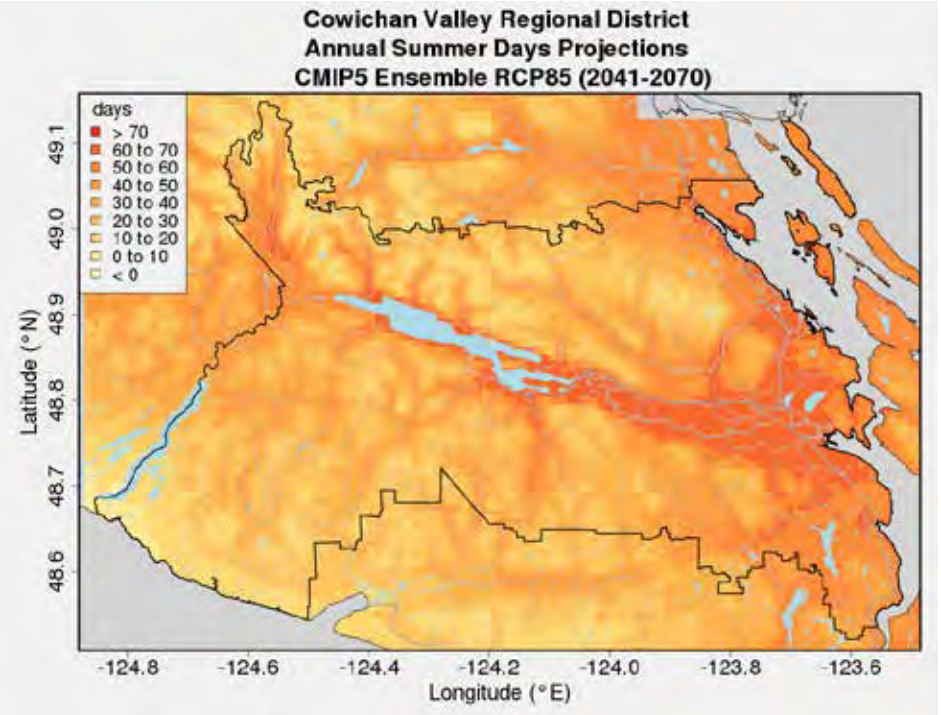


Figure 13: Annual Summer Days – 2050s

Summer Temperature Indicators

TABLE 8: HOT SUMMER INDICATORS – REGIONAL AVERAGES

	Past (days)	2050s (days)	2080s (days)	2050s Change (days)		2080s Change (days)	
				Average	(Range)	Average	(Range)
Summer days (# of days >25°C)	16	39	59	23	(15 to 32)	43	(28 to 62)
	Past (°C)	2050s (°C)	2080s (°C)	2050s Change (°C)		2080s Change (°C)	
				Average	(Range)	Average	(Range)
Hottest daytime high (°C)	30	33	35	3.3	(2.0 to 4.0)	5.5	(3.9 to 7.2)
1-in-20 hottest daytime high (°C)	33	37	39	4.1	(2.6 to 5.2)	6.0	(4.1 to 7.9)

TABLE 9: HOT SUMMERS IN THE SUB-REGIONS

	Developed Area			Water Supply Watersheds			West Coast Watersheds		
	Past (days)	2050s Change (days)	2080s Change (days)	Past (days)	2050s Change (days)	2080s Change (days)	Past (days)	2050s Change (days)	2080s Change (days)
Summer days (# of days >25°C)	23	31 (19 to 42)	55 (35 to 78)	16	21 (13 to 30)	40 (27 to 57)	10	18 (11 to 26)	36 (25 to 48)
	Past (°C)	2050s Change (°C)	2080s Change (°C)	Past (°C)	2050s Change (°C)	2080s Change (°C)	Past (°C)	2050s Change (°C)	2080s Change (°C)
Hottest daytime high (°C)	31	3.5 (2.2 to 4.4)	5.7 (3.9 to 7.7)	30	3.3 (2.0 to 4.0	5.5 (3.9 to 7.3)	29	3.1 (1.9 to 3.6)	5.2 (3.8 to 6.7)
1-in-20 hottest daytime high (°C)	34	4.3 (2.6 to 5.8)	6.3 (4.3 to 8.6)	33	4.2 (2.8 to 5.3)	6.0 (4.3 to 8.1)	33	3.8 (2.5 to 4.7)	5.6 (3.8 to 7.0)

Hottest Day

ABOUT THIS INDICATOR

Hottest day refers to the highest daytime high temperature of the year, usually experienced during the summer months. The maximum for each year is an indicator of extreme temperatures and is averaged over a 30-year period.

PROJECTIONS

The past hottest day temperature was 30°C for the region. We can expect increases to over 33°C by the 2050s, and almost 36°C by the 2080s. Like summer days (shown above) the highest increases can be expected in our region's Developed Area. An increase in hottest day temperatures is projected to cause up to one week of tropical nights (nights when temperatures do not decrease below 25°C) in the future. These warming trends are similar in the sub-regions.

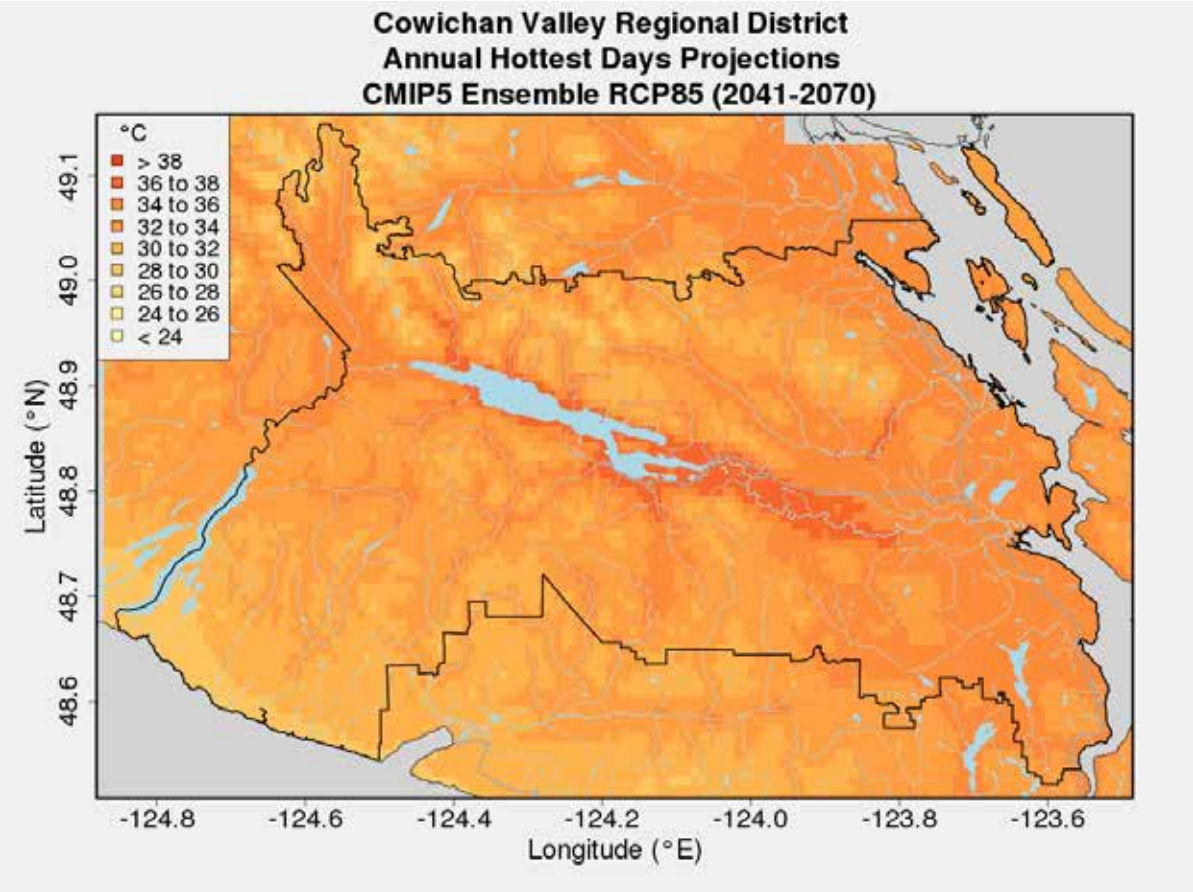


Figure 14: Annual Hottest Days – 2050s

1-in-20 Hottest Day

ABOUT THIS INDICATOR

1-in-20 hottest day refers to the day so hot that it has only a one-in-twenty chance of occurring in a given year. That is, there is a 5% chance in any year that temperatures could reach this magnitude.

PROJECTIONS

As temperatures warm, so will extreme heat events. Our past 1-in-20 hottest day temperature is about 33°C. By the 2050s we can expect this value to increase to over 37°C, and to over 39°C by the 2080s. In low-lying areas where the population is centered, like Duncan the past event is about 34°C and we can expect 1-in-20 hottest day temperatures to rise by 4°C to 38°C by the 2050s, and to over 40°C by the 2080s. This is a significant departure from what the region is accustomed to experiencing.

The 1-in-20 hottest day temperatures are projected to affect the entire region, and like other hot summer indicators, are mostly likely to affect valleys and eastern reaches.

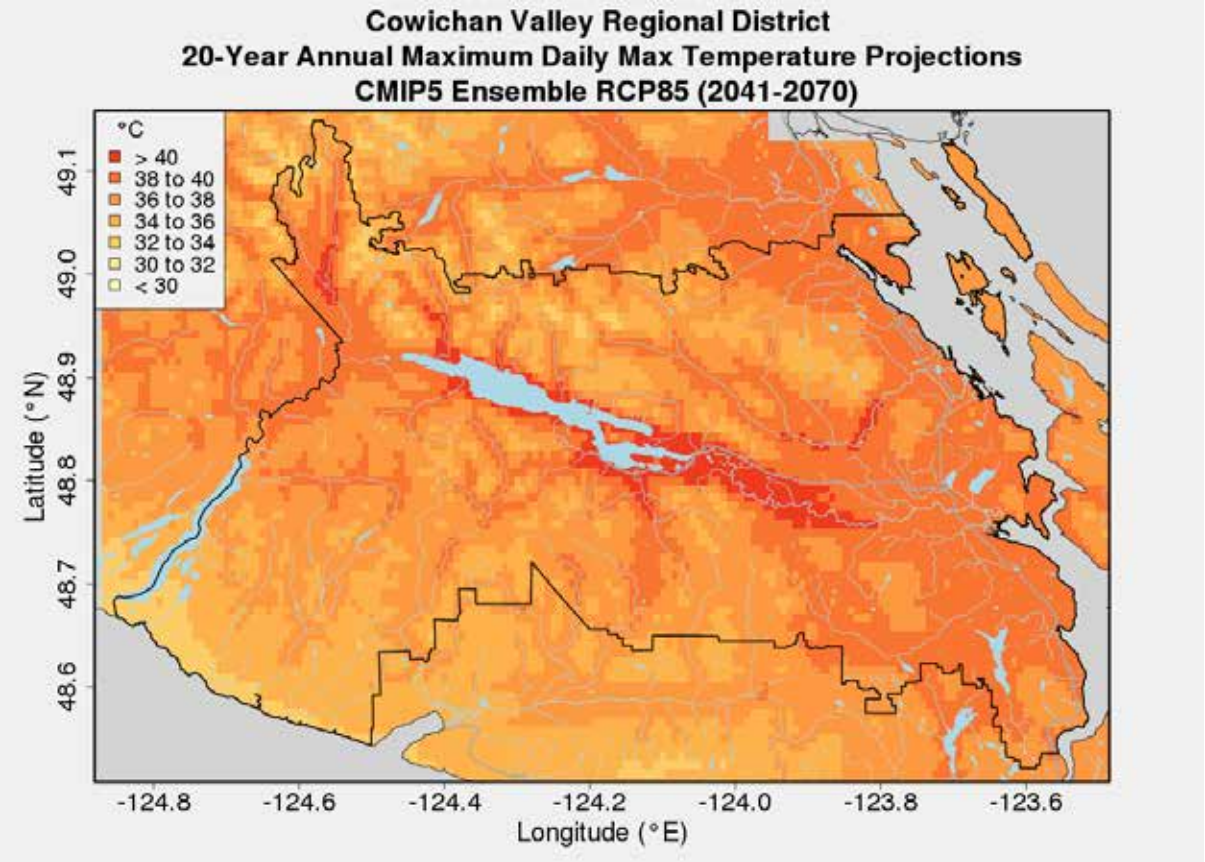


Figure 15: 1-in-20 Hottest Day – 2050s

Cooling Degree Days

ABOUT THIS INDICATOR

Cooling degree days refers to the number of degrees that a day's average temperature is above 18°C, and is used to estimate the use of air conditioning to cool buildings. To determine the number of cooling degree days in a month, the number of degrees that the daily temperature is over 18°C for each day is added to give a total value.

PROJECTIONS

Historically there has been very little demand for cooling in the Developed Area of our region. This is reflected in the baseline average of 47 cooling degree days in the past. In the future it is projected that there will be an over 300% increase in cooling degree days by the 2050s, and an over 700% increase by the 2080s. The large relative increases are partly due to a low historical baseline.

TABLE 10: COOLING DEGREE DAYS

	Past (degree days)	2050s (degree days)	2080s (degree days)	2050s Percent Change (%)		2080s Percent Change (%)	
				Average	(Range)	Average	(Range)
Region	28	136	272	387	(213 to 575)	868	(512 to 1387)
Developed Area	47	208	387	342	(198 to 515)	720	(439 to 1172)

Historically there has been very little demand for cooling in the Developed Area of our region. The large relative increases are partly due to a low historical baseline.

Cooling Degree Days, Continued

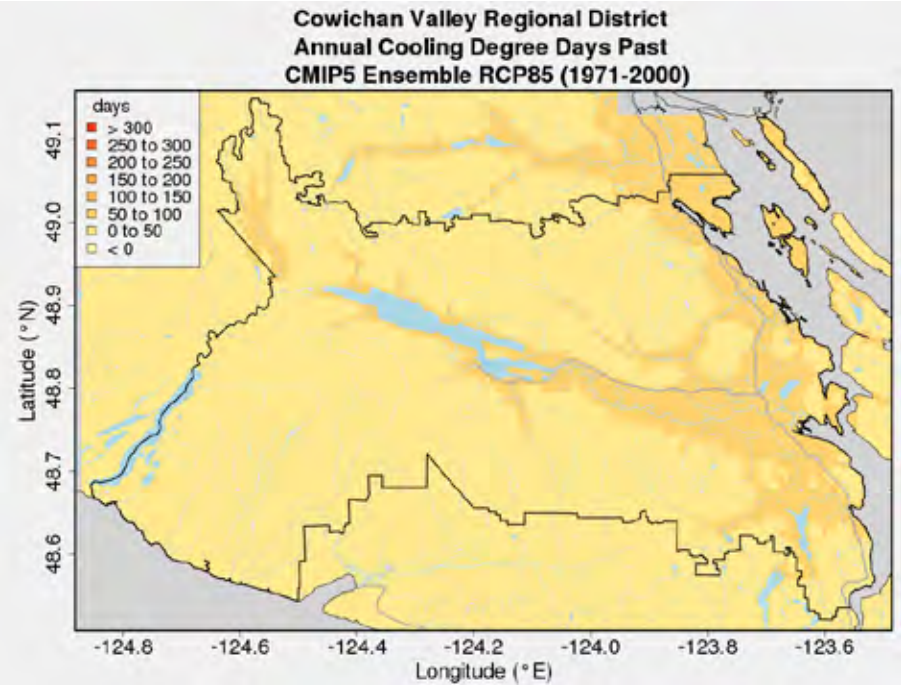


Figure 16: Cooling Degree Days – Past

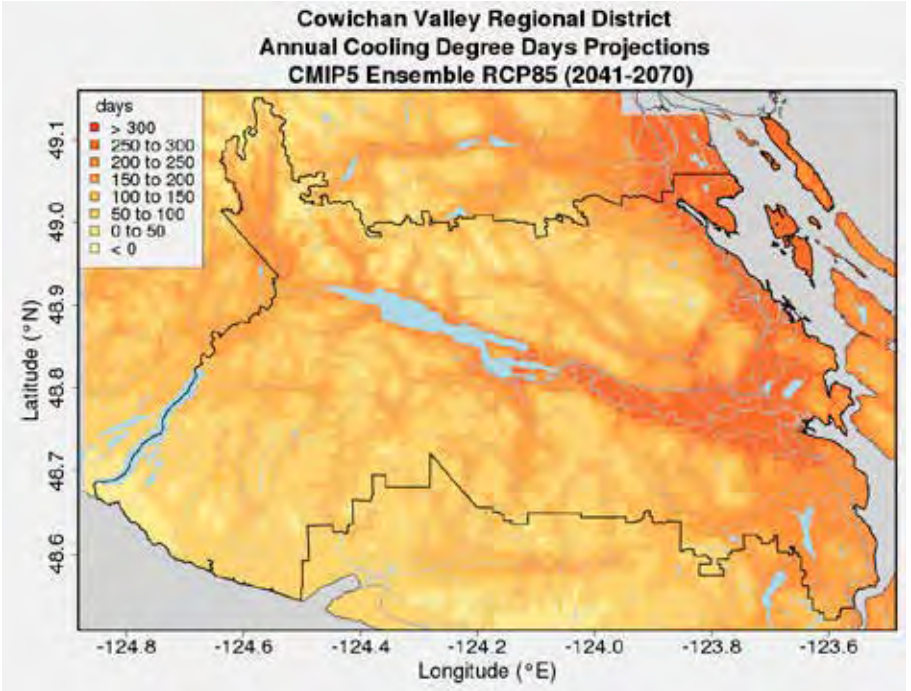


Figure 17: Cooling Degree Days – 2050s

Cooling degree days refers to the number of degrees that a day's average temperature is above 18°C, and is used to estimate the use of air conditioning to cool buildings.

Growing Season Length

ABOUT THIS INDICATOR

Growing season length is an annual measure that counts the number of days between the first span of at least six days with a daily average temperature greater than 5°C and the first span after July 1 of six days with temperature less than 5°C. It indicates the length of the growing season for typical plants or crops.

PROJECTIONS

In the past, our region had an average of 237 days in the growing season. We can expect 66 days will be added to the growing season by the 2050s, and 100 days by the 2080s, resulting in nearly a year-round growing season of 337 days on average. In forest ecosystems at higher elevations, the growing season will lengthen by more days as higher temperatures creep up the mountains and more days tip over the 5°C threshold. By the 2080s, we will see a growing-season length at higher elevations similar to that projected for the Developed Area (337 days and 349 days respectively).

TABLE 11: GROWING SEASON LENGTH

	Past (days)	2050s (days)	2080s (days)	2050s Change (days)		2080s Change (days)	
				Average	(Range)	Average	(Range)
Region	237	303	337	66	(46 to 80)	100	(85 to 113)
Developed Area	262	322	349	60	(47 to 71)	87	(78 to 94)
Water Supply Watersheds	218	287	328	69	(46 to 86)	110	(89 to 126)
West Coast Watersheds	232	301	337	69	(49 to 85)	105	(92 to 118)

Growing Season Length, Continued

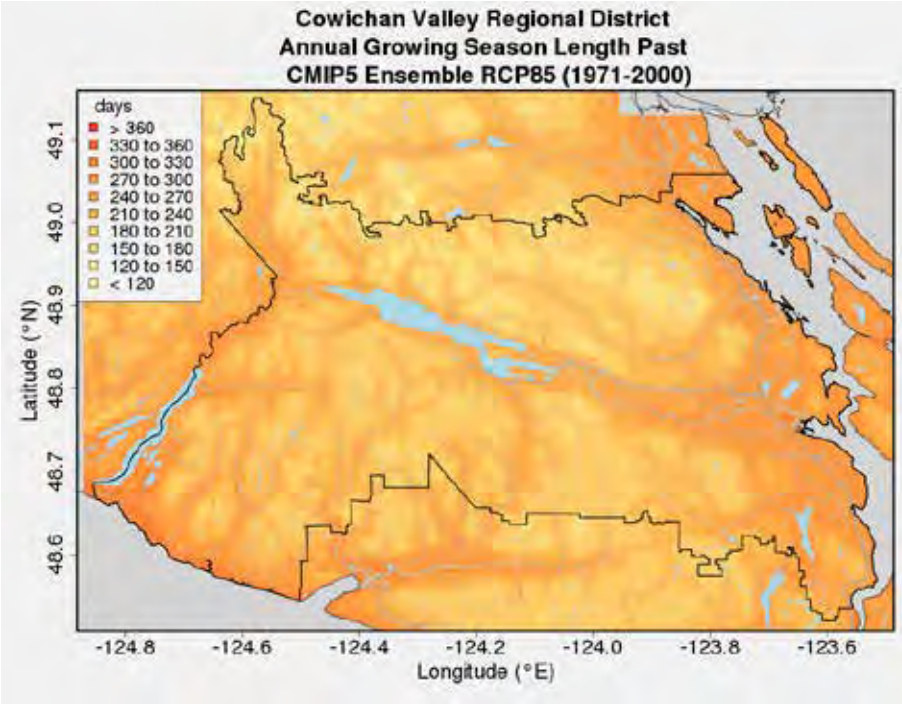


Figure 18: Growing Season Length – Past

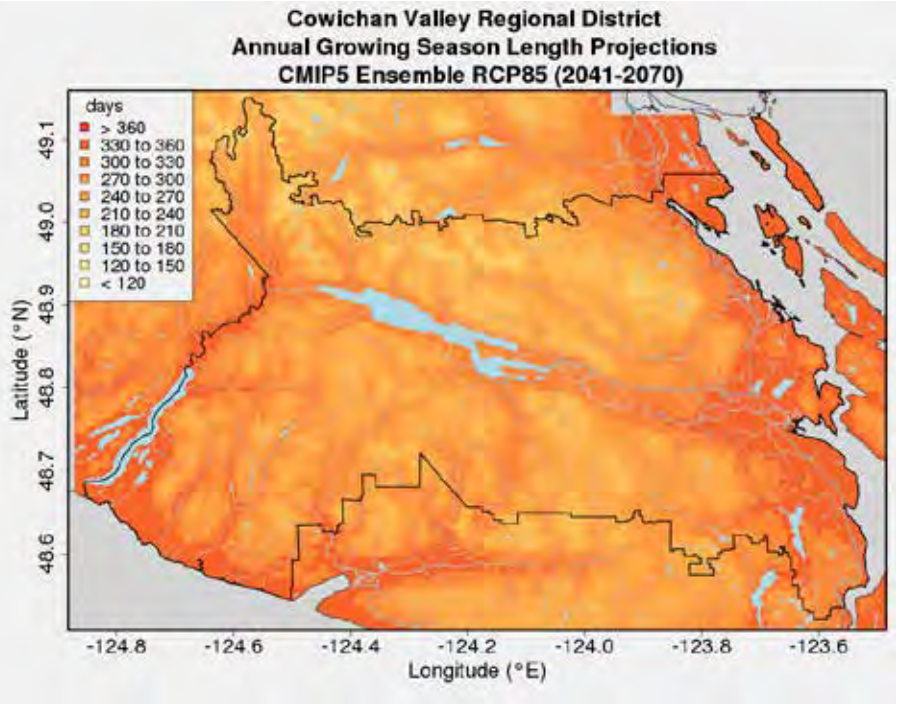


Figure 19: Growing Season Length – 2050s

We can expect 66 days will be added to the growing season by the 2050s, and 100 days by the 2080s.

Growing Degree Days

ABOUT THIS INDICATOR

Growing degree days are a measure of heat accumulation that is useful for agriculture and horticulture. Growing degree days are calculated by how much warmer daily temperatures are compared to a base temperature of 5°C (note: 5°C is used for this report, though different base temperatures may be used for different crops). For example, if a day had an average temperature of 11°C, that day would have a value of 6 growing degree days. Annual growing degree days are the total of adding this for each day of the year. This measure is useful for determining future agricultural opportunities, and to understand drivers of change in ecological systems, for example fish productivity.

PROJECTIONS

In the past, there were 1505 growing degree days on average in our region. Projections indicate increases in growing degree days throughout the region. By the 2050s, we can expect 49% more growing degree days, and 85% more growing degree days by the 2080s. Similar to the growing season length, trends in the sub-regions are in line with regional projections, with slightly more increases in higher elevations.

TABLE 12: GROWING DEGREE DAYS

	Past (degree days)	2050s (degree days)	2080s (degree days)	2050s Percent Change (%)		2080s Percent Change (%)	
				Average	(Range)	Average	(Range)
Region	1505	2238	2807	49	(26 to 74)	85.3	(53 to 121)
Developed Area	1772	2588	3177	46	(25 to 69)	79.4	(48 to 113)
Water Supply Watersheds	1380	2074	2605	51	(26 to 78)	88.8	(54 to 127)
West Coast Watersheds	1384	2079	2611	50	(28 to 77)	88.8	(55 to 126)

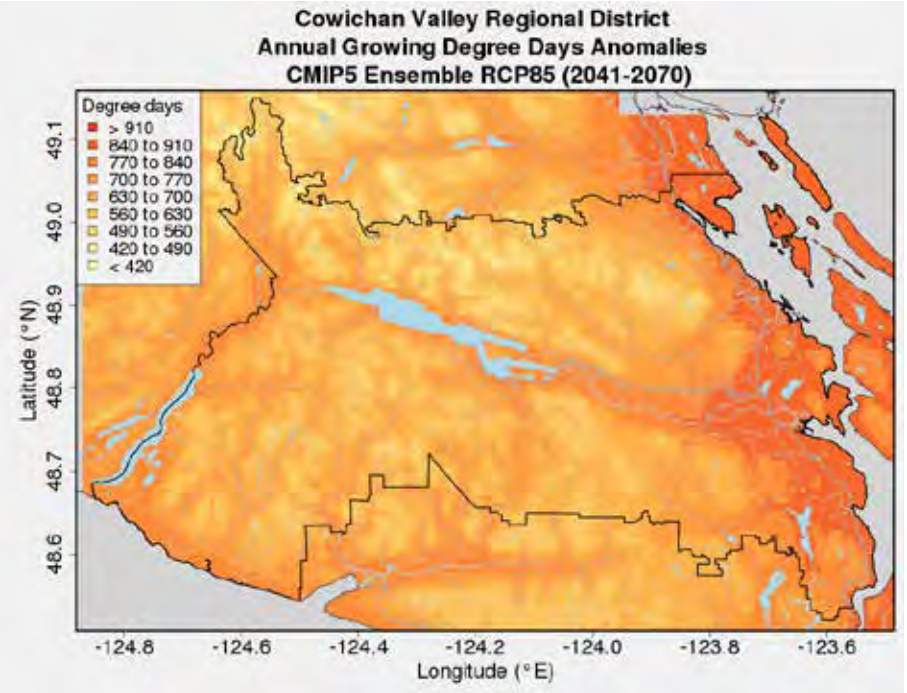


Figure 20: Growing Degree Days – Anomaly

Winter Temperature Indicators

Future climate projections suggest our region can expect to see warmer winter months. These indicators provide insight into the "new normal" for winter temperatures in our region, and are useful when trying to determine how local ecological systems will change over time.

Warmest Winter Day

ABOUT THIS INDICATOR

Warmest winter day is the highest temperature recorded during the winter months, in an average year. This indicator is helpful to understand winter temperature trends when considered in combination with the coldest winter night temperatures below.

PROJECTIONS

By the 2050s, we can expect to see the warmest winter temperature to rise from 12°C to about 14°C. This value may increase to about 17°C by the 2080s (projections range from 14°C to 22°C, depending on the model). Sub-regional trends are similar to regional trends.

TABLE 13: WARMER WINTER TEMPERATURES

	Past (°C)	2050s (°C)	2080s (°C)	2050s Change (°C)		2080s Change (°C)	
				Average	(Range)	Average	(Range)
Warmest winter day	12	14	17	2.7	(0.2 to 5.2)	5.2	(1.8 to 10.3)
Coldest winter night	-10	-6	-3	4.1	(2.3 to 5.7)	6.7	(4.8 to 7.9)
1-in-20 coldest night	-17	-13	-10	3.8	(1.8 to 5.5)	6.5	(4.5 to 7.9)

Coldest Winter Night

ABOUT THIS INDICATOR

Coldest winter night refers to the lowest temperature of the year, usually experienced at nighttime during the winter months.

PROJECTIONS

In the past, the coldest night had a temperature of -10°C. Models project the annual minimum temperature to warm by roughly 4°C by the 2050s, to -6°C, and by about 7°C by the 2080s, to -3°C. In the future, temperatures below freezing will rarely occur anywhere but at the highest elevations. Sub-regional changes are similar to regional projections.

TABLE 14: WARMER WINTER TEMPERATURES IN THE SUB-REGIONS

	Developed Area			Water Supply Watersheds			West Coast Watersheds		
	Past (°C)	2050s Change (°C)	2080s Change (°C)	Past (°C)	2050s Change (°C)	2080s Change (°C)	Past (°C)	2050s Change (°C)	2080s Change (°C)
Warmest winter day	12	2.9 (0.4 to 5.5)	5.5 (2.0 to 10.5)	11	2.7 (0.0 to 5.4)	5.3 (1.8 to 10.7)	11	2.6 (0.1 to 4.8)	5.0 (1.7 to 10.0)
Coldest winter night	-10	4.3 (2.5 to 5.8)	6.8 (4.8 to 8.1)	-11	4.2 (2.3 to 5.8)	6.8 (4.8 to 8.1)	-10	3.9 (2.2 to 5.5)	6.4 (4.6 to 7.6)
1-in-20 coldest night	-16	3.9 (1.8 to 5.8)	6.3 (4.6 to 8.1)	-18	3.8 (1.8 to 5.7)	-6.6 (4.5 to 8.2)	-16	3.5 (1.1 to 5.4)	6.4 (4.3 to 7.9)

1-in-20 Coldest Night

ABOUT THIS INDICATOR

1-in-20 coldest night refers to a nighttime low temperature so cold that it has only a one-in-twenty chance of occurring in a given year. That is, there is a 5% chance in any year that a minimum temperature of this value will occur. This indicator is a marker of extreme winter cold temperatures.

PROJECTIONS

The 1-in-20 coldest night across the region is projected to increase by almost 4°C by the 2050s to -13°C, and over 6°C by the 2080s to -10°C. Sub-regional changes are similar to regional projections.

TABLE 15: ANNUAL HEATING DEGREE DAYS

	Past (degree days)	2050s (degree days)	2080s (degree days)	2050s Percent Change (%)		2080s Percent Change (%)	
				Average	(Range)	Average	(Range)
Region	3659	2793	2290	-24	(-33 to -14)	-37	(-51 to -26)

Heating Degree Days

ABOUT THIS INDICATOR

Heating degree days refers to the number of degrees that a day's average temperature is below 18°C, and is used to estimate the amount of energy used to heat buildings. To determine the number of heating degree days in a month, the number of degrees that the daily temperature is below 18°C for each day would be added to give a total value.

PROJECTIONS

Our region experiences many more heating degree days compared to cooling degree days. Our past regional annual average of heating degree days is almost 3700. Heating degree days are projected to decrease by 24% by 2050s, and by 37% by the 2080s. Sub-regional percent changes are similar, with decreases of 23% to 26% by the 2050s.

Heating degree days are projected to decrease by 24% by 2050s, and by 37% by the 2080s. Sub-regional percent changes are similar, with decreases of 23% to 26% by the 2050s.

Heating Degree Days, Continued

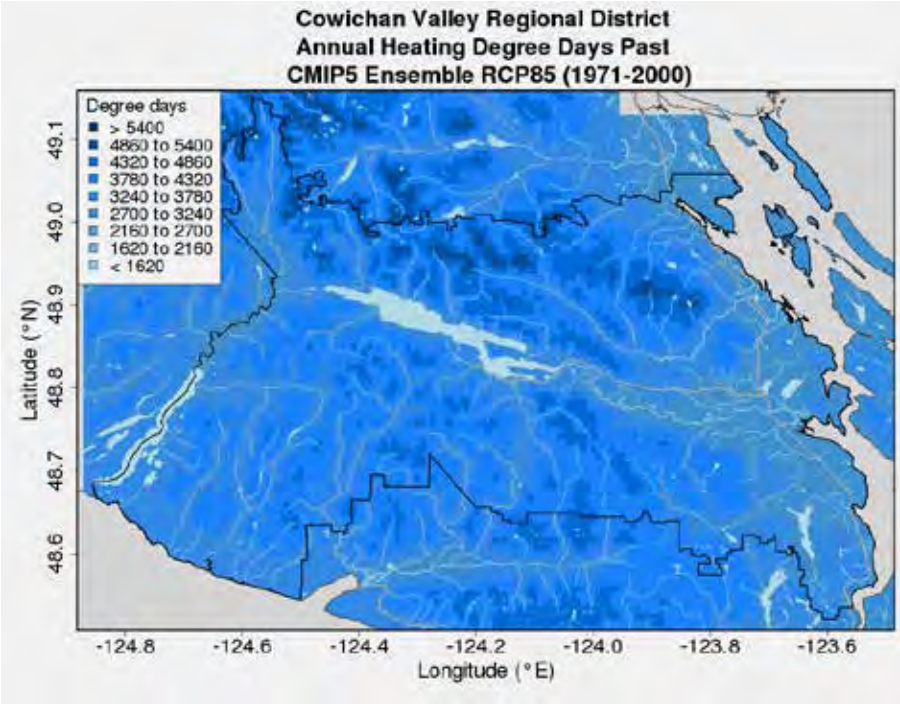


Figure 21: Heating Degree Days – Past

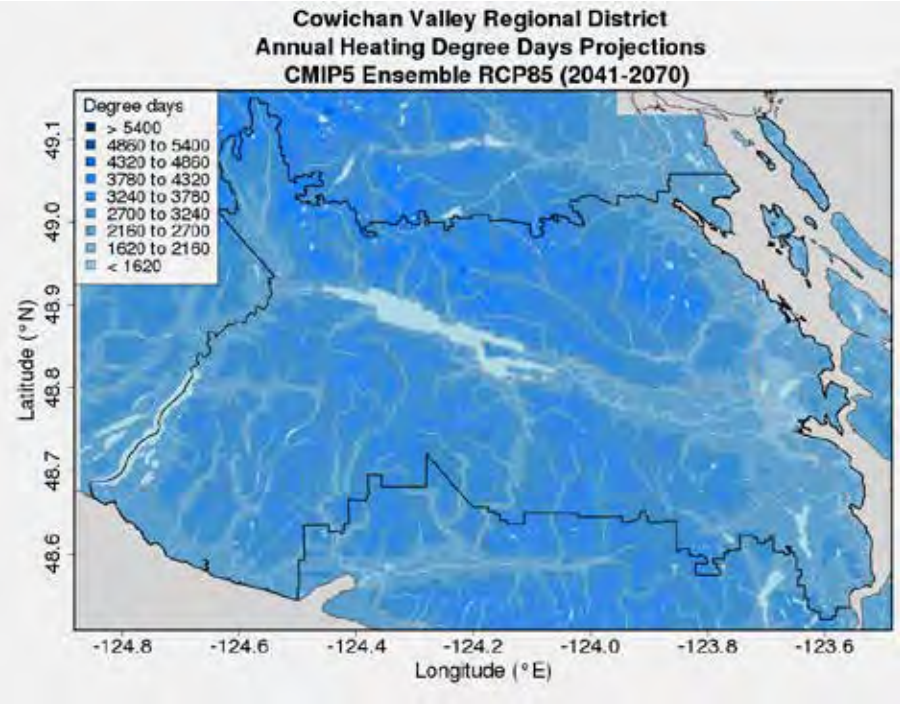


Figure 22: Heating Degree Days – 2050s

Frost Days

ABOUT THIS INDICATOR

Frost days is an annual count of days when the daily minimum temperature is less than 0°C, which may result in frost on the ground. This indicator is useful when predicting which species may thrive in our shifting ecosystem.

PROJECTIONS

In the past, our region had 86 frost days a year. Lower elevations experienced only 66 frost days, while there were 101 days in the Water Supply Watersheds. Future projections indicate the region may expect 32 frost days by the 2050s, and 15 by the 2080s. Changes are relatively uniform across the region. By the 2080s, the "new normal" is a climate that is almost entirely frost-free in lower elevations, with higher elevations experiencing only two to three weeks of frost days a year.

TABLE 16: ANNUAL FROST DAYS

	Past (°C)	2050s (°C)	2080s (°C)	2050s Change (°C)		2080s Change (°C)	
				Average	(Range)	Average	(Range)
Region	86	32	15	-54	(-66 to -41)	-71	(-80 to -60)
Developed Area	66	20	8	-46	(-56 to -35)	-58	(-63 to -50)
Water Supply Watersheds	101	41	19	-60	(-75 to -46)	-82	(-93 to -68)
West Coast Watersheds	88	33	15	-55	(-69 to -42)	-73	(-82 to -62)

Frost Days, Continued

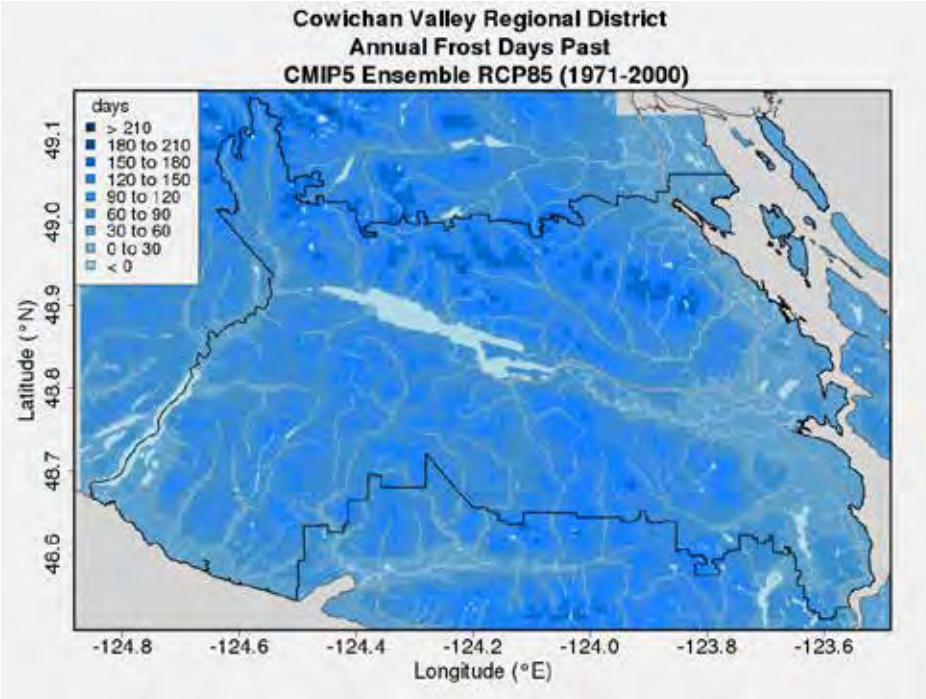


Figure 23: Annual Frost Days – Past

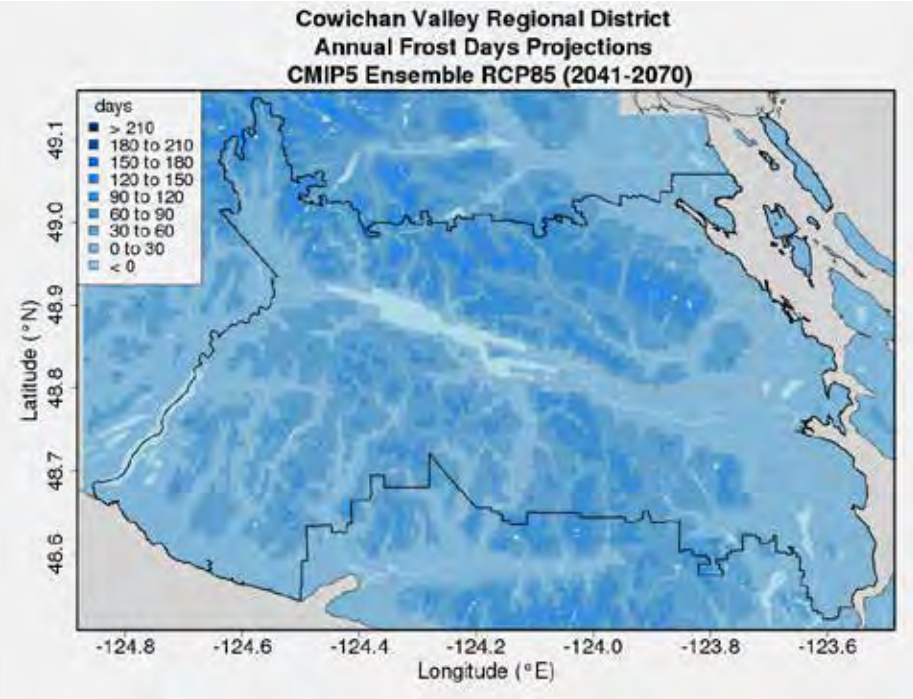


Figure 24: Annual Frost Days – 2050s

Ice Days

ABOUT THIS INDICATOR

Ice days are days when daytime high temperature is less than 0°C.

PROJECTIONS

In the past, our region had on average 6 ice days per year, mainly in areas of higher elevation. Future projections indicate a "new normal" where higher elevation areas experience very few days, if any, when the daily high temperature remains below freezing. The region may expect 2 ice days by the 2050s, and by the 2080s temperatures below freezing will rarely occur anywhere but at the highest elevations, as shown in the plots below.

TABLE 17: ANNUAL ICE DAYS

	Past (days)	2050s (days)	2080s (days)	2050s Change (days)		2080s Change (days)	
				Average	(Range)	Average	(Range)
Ice days (# of days < 0°C)	6	2	0	-4	(-6 to -2)	-6	(7 to -5)

Ice Days, Continued

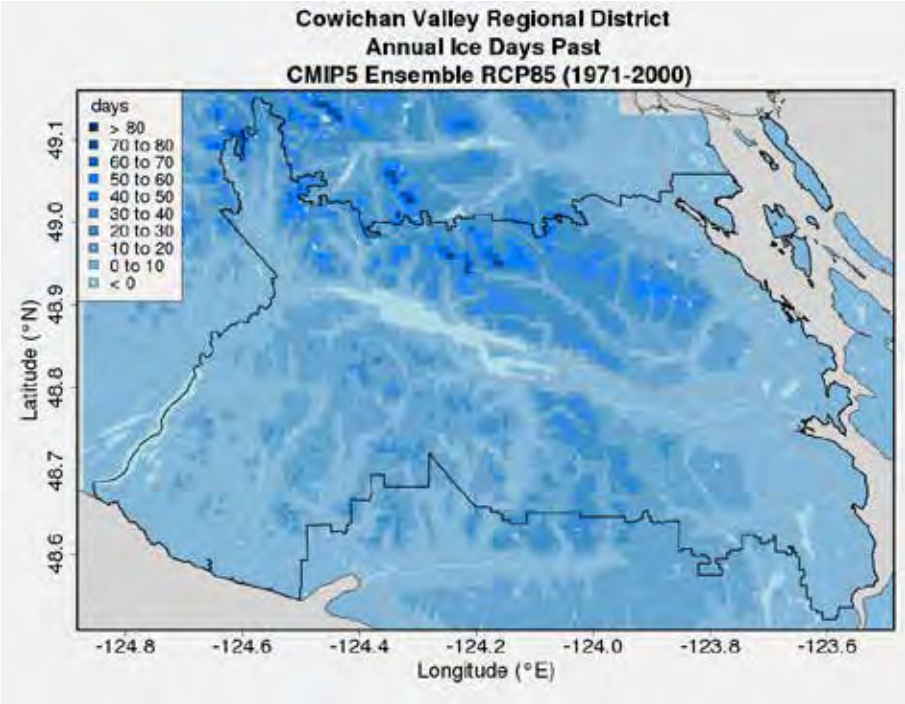


Figure 25: Annual Ice Days – Past

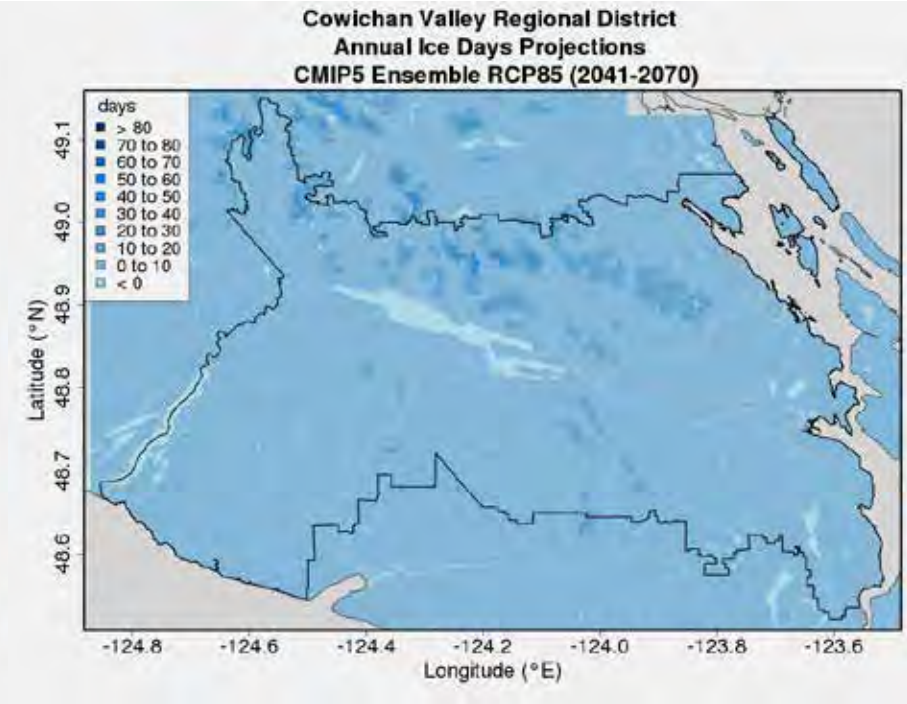


Figure 26: Annual Ice Days – 2050s

Future projections indicate a "new normal" where higher elevation areas experience very few days, if any, when the daily high temperature remains below freezing.

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Regional Impacts

The projected changes to our climate discussed in this report will have multiple impacts in our region, and on the land- and water-based ecosystems on which we depend. Temperature rise, and the dramatic increase in variability, or "unusual weather for this season," can expect to cause stress to some and create opportunities for others. This section provides a brief overview of the types of impacts we can expect in various sectors. A more in-depth analysis of these impacts will be the focus of the next phase of New Normal Cowichan, which will explore these in more detail and develop a suite of actions. This report is intended to spark a deeper discussion among community leaders involved in conducting land-use planning, managing and designing safe and sustainable infrastructure, managing the health of our population and ecosystems, and anticipating the economic challenges and opportunities ahead. This will be further examined in the following phases of New Normal Cowichan.

The impacts of climate change are complex and interrelated. For the purposes of this high-level scan they are organized into the following categories:

- Ecosystems and Biodiversity
- Watershed and Groundwater Health
- Health and Well-being
- Infrastructure
- Economic Development
- Bioregional Carrying Capacity

Ecosystems and Biodiversity

As climate change occurs, ecosystems and species can be expected to experience stress, resulting in changes to biological diversity. At a high level, we can predict warmer temperatures and increased variability to upset the timing of biological cycles and strain sensitive habitat. Warmer temperatures will also enhance the potential for invasive species, pests, and pathogens to increase across the region, which are likely to compromise native species.

TERRESTRIAL ECOSYSTEMS (FORESTS, WETLANDS, CONNECTIONS TO AQUATIC ECOSYSTEMS)

While some terrestrial species may thrive in our future climate, others may decline. Longer drought periods, coupled with more intense precipitation at other times, is likely to have an impact on soil chemistry and the soil's capacity to absorb and retain water, which may lead to increased risk of slope failure, overland flooding, stream collapse, and transport of silt to water bodies. Compromised soil conditions and root systems may increase the risk of trees being blown down. An increase in the risk of wildfires can also be expected, further stressing upland forest water-holding capacity, exposing soils directly to the elements, and causing further erosion.

RYAN HETSCHKO

Earlier springs and a longer growing season may cause some species' reproductive and biological cycles to be out of sync with the new climate. Early leaf development could shade the understory of deciduous forests, which could cause species loss and impacts throughout the food chain. We can expect Cedar, a sentinel species to the region already under stress, to reduce in range, while Garry Oak, a rare and imperiled ecosystem, may have the potential to expand in range. New species seeking refuge from a warming south may migrate to our region through a variety of means. With warmer, drier summers, we can expect an increasing scarcity of water, changes to plant growth rates, heat stress, and reduced quality of forage crops.

AQUATIC ECOSYSTEMS AND SPECIES HEALTH

Temperature increases and changes in precipitation over the seasons can be expected to affect our regional water-based ecosystems. Aquatic habitat and species may be stressed in summer by decreasing streamflow, warmer water temperatures, and an earlier freshet. In the fall/winter/spring, aquatic habitat and species will be stressed by increased erosion bringing silt and sediments into watercourses and estuaries. These changes may affect salmon migration and their long-term survival in many of the region's watersheds. Loss of salmon as a key nutrient driver would affect the long-term viability of forest ecosystems particularly with increased rainfall further reducing nutrient levels. Fish species in upland water bodies, and those that migrate between fresh water and the ocean would also be affected by the expected changes to habitat described above. Warmer water also enhances the potential for algal blooms, invasive weed growth, and low oxygen levels that would further stress these sensitive ecosystems.

Watershed and Groundwater Health

WATER SUPPLY AND DEMAND

The majority of our region's drinking water supply comes from groundwater wells, and in some cases regional lakes and rivers, fed by rainfall and snowmelt. With warmer winter weather, more rainfall is expected during extreme events, while snowpack may be compromised, as well as the ability of watersheds, wetlands, lakes, and groundwater wells to hold and store water for summer use. Based on studies undertaken in the Cowichan Valley, existing groundwater recharge rates vary across the region's aquifers. Changes to precipitation patterns and snow will affect the region's groundwater resources unevenly, with some aquifers experiencing lower recharge values and some potentially becoming more productive.

At current levels of water use in our region, we can expect our water supply to be strained during times of the year when temperatures are high and water is in greatest demand. As our population grows, overall groundwater extraction rates can be expected to increase and water conservation will increasingly become a priority. Regional watershed and supply management will be necessary to balance competing water needs with diminishing surface and groundwater supplies.

WATER QUALITY

With warmer temperatures, decreased summer precipitation, and extreme rainfall at times, we may see a decrease in water quality throughout the region. Erosion of upland soils would introduce nutrients, silt, organic materials, and contaminants into our water systems. We may also see a decrease in water quality due to algal blooms, turbidity arising from flash floods and extreme events, and chemical and microbiological contaminants introduced during first flush events. Additionally, drawing down surface reservoirs can be expected to change the natural conditions and will likely have negative effects on water quality. With reduced water quality, surface drinking water systems may be compromised, and existing water treatment facilities may not be adequate.

Health and Well-Being

PHYSICAL

Temperature and precipitation have a direct relationship with air quality and human health. Hotter, drier summer conditions, combined with decreased snowpack, may lead to an increase in wildfire and slash-burning activity. Smoke contributes a significant amount of particulate matter into our air, which is a known human carcinogen. Uncertainty around future wind patterns and temperature inversions may compound this issue. Also, warmer summer temperatures cause increases in ground-level ozone, which can cause breathing problems, trigger asthma, reduce lung function, and cause lung disease, particularly in children, older adults, and people who are active outdoors. Warmer winters could result in less use of fireplaces and wood stoves for heating, potentially improving winter air quality and reducing human exposure to smoke from wood-burning appliances.

> Temperature and precipitation have a direct relationship with air quality and human health.

Hotter, drier summers also cause heat stress and have an impact on human health. Although heat stress may appear less threatening than in areas that already experience hot summers, stress levels may be high because much of the population is accustomed to mild temperatures and is less prepared to accommodate high temperatures. Increased heat stress may require local governments to provide infrastructure to support cool-down areas. In extreme cases, we may see increased allergies and hospitalization of vulnerable populations due to poor air quality, heat stroke, and increases in environmental and vector-borne diseases. Also, as water quality is compromised, it will likely be more difficult to supply clean drinking water to regional citizens.

SOCIAL (SOCIAL NETWORK STRESS, MENTAL HEALTH)

With warmer temperatures, decreased summer The uncertainty posed by our changing climate, and the associated changes in how we are used to living in the region can lead to an increased level of stress and compromised mental health for individuals in our region. Vulnerable populations who do not have the resources to adapt to heat stress, loss of income, property damage, and other stresses that may come with a changing climate require increased social support. It is prudent to prepare for an increase in at-risk populations requiring assistance and support to protect public health in the future.

EMERGENCY MANAGEMENT

Emergency managers can plan for increased incidence of forest fires, floods, and landslides. Enhanced communications on the expected outcomes of climate change in the region, paired with information on the public's role in emergency preparedness is critical to improving our resilience during future increases in "natural disasters". It is also important for emergency managers to work closely with regional planners to ensure plans are not dependent on critical infrastructure that may be stressed during future extreme events.

Infrastructure

We can expect extreme precipitation events, more intense storms (including increases in localized storms), hotter temperatures, longer dry periods, and year-to-year variability of these conditions to put a strain on existing infrastructure and buildings. With increased flooding, drought, episodic snow events, and heat waves, the business case for "future-proofing" infrastructure will become stronger.

The extreme rainfall indicators illustrate future extreme events may be beyond the frequency and intensity of events for which we are currently prepared. It can be assumed that the trends projected (and their relative intensity) will continue past the end-of-century timeframe presented in this report. This information offers important context for those who design critical infrastructure in our region, and merits further detailed study to inform future Intensity-Duration-Frequency (IDF) curves and other design criteria, especially for infrastructure that is expected to last for many decades.

STORMWATER SYSTEMS

Increases in storm intensity are expected to put significant pressure on our region's stormwater management and drainage systems. Extreme precipitation and an increase in 5-day events may cause drainage systems and streams to overflow, soil saturation, and flooding in low-lying areas.

These impacts may also combine to affect slope stability, leading to increased risk of landslides. This can be expected to cause damage to personal property and public infrastructure.

SEWAGE AND WATER TREATMENT

Our sewage and water treatment facilities will likely struggle to keep up with increased flows during storm events. Increased rainwater inflows to sewage treatment facilities leads to a reduction in system efficiencies, resulting in a higher potential of overflow and impacts to the environment and public health. Overall turbidity in the surface water supply during storm events reduces water quality, resulting in increasing costs of treatment, maintenance, and boil-water orders affecting the community.

ROADS AND TRANSPORTATION

Preparing our transportation networks for the changes ahead requires an updated approach to design, materials, and maintenance programs. Changes to freeze-thaw cycles, shifting precipitation patterns, more frequent flooding events, and increased summer temperatures all have an impact on annual operations and maintenance plans, and long-range planning decisions. Warmer winters may provide more opportunities for year-round active transportation (cycling and walking), and may improve safety at certain times of the year for all road users.

HOUSING AND BUILDINGS

There are opportunities to adapt housing to climate change on a building-by-building scale. The business case for technologies including onsite renewable generation, water capture and reuse, onsite stormwater detention and management, resilient landscaping, green roofs and walls, passive shading, and other alternative building approaches and materials will improve. Other siting parameters will likely become more critical, including the need for compact development in village centres, preservation of natural areas to buffer settlements from future extreme events, and avoiding new infrastructure in areas at risk of flooding. New buildings will likely need to withstand heavier snow loads in some years, higher and more frequent wind speeds, higher temperatures and duration of heat waves, higher maximum rainfalls, and rising sea levels. Additionally, a milder climate may increase indoor air humidity, leading to better conditions for mould and house dust mites, and decrease indoor air quality in some buildings.

There are opportunities to adapt housing to climate change on a building-by-building scale.

ENERGY USE AND DISTRIBUTION

Substantial shifts in energy demand are anticipated as a result of increasing temperatures, with heating demands decreasing and cooling demands increasing over time. Currently, residential buildings are largely cooled by night air. As cooling degree days increase along with the introduction of tropical nights in the Developed Areas, the ability of buildings to cool without mechanical systems will decrease, and energy use for air conditioning may increase. With more buildings requiring energy for cooling, summer energy supply may become a challenge for our region and province. Long-term planning of provincial energy infrastructure could be significantly affected by the projected major shift in province-wide heating and cooling requirements, improving the feasibility of local renewable energy production.

Economic Development

A changing climate brings challenges and opportunities. It is thought that the biggest impacts in economic development will be in the agriculture and forestry industries, while tourism may also be affected. Warmer temperatures and prolonged summer drought, combined with extreme out-of-season storm events can be expected to bring uncertainty to the forestry, agricultural, and tourism sectors.

AGRICULTURE

More growing degree days, along with a reduction of frost days would create a longer growing season in our region. Agricultural producers can expect earlier harvests, and potentially year-round productive growing. This benefit may be challenged by an increase in heat stress, sun scald, invasive species, pests, and plant diseases, which can threaten plant health and crop productivity. An increase in the intensity of spring storms may also damage young plants and their vulnerable root systems, requiring secondary planting some years. Additionally, increased competition for water resources in the region, and inappropriate timing of pollinators, may limit the ability of traditional crops and species to grow.

While some agricultural production may experience challenges, opportunities for diversity and higher crop productivity are also possible. Agricultural managers who are experiencing challenges may need to consider alternative crops, new irrigation systems, enhanced drainage, rainwater capture, nutrient management, livestock management, and soil conditioning techniques. Agricultural producers can expect to feel a shift in energy costs, as heating demand for greenhouses will likely decrease, and cooling needs for greenhouses and livestock facilities will likely increase. Additionally, food security may become an increasingly important issue as global food systems adapt to climate change, and local crop production may vary year to year due to the stressors mentioned above.

FORESTRY

Decreases in snowpack, frost days, and summer precipitation, combined with increasing temperatures, may cause tree growth to decline and mortality rates in vulnerable species to rise. Increased risk of extreme rain events in winter, with their increased erosion potential, can be expected to challenge harvest opening sizes, cut-block orientation, road-building and de-activation practices, slope-stability practices, blow-down prevention, rotation lengths, and commercial viability.

Certain tree species in our region's mountains may migrate to different elevations in search of suitable temperature and precipitation conditions. Forestry managers can expect to consider increased risk of forest fires, lower growth rates, stress to forest health posed by disease and pests, maintenance of infrastructure, and the introduction of new planting patterns and species that will be resilient in our new climate. Water shortages during the dry spells, and associated increases in water cost may have a significant impact on the viability of forestry in our region over the long term.

TOURISM

Like other industries, climate change will likely bring a variety of benefits and challenges to the tourism industry. Warmer temperatures and drier summers may benefit tourism opportunities by attracting visitors in the warmer seasons, though drought conditions and increased temperatures may negatively impact the ability of people to enjoy summer tourism opportunities. Over time, we may see traditional winter sports becoming more difficult to sustain year over year, and these may be replaced by shoulder season or summer recreation activities all year round. Also, as our ecosystems experience stress, some recreation venues may become less attractive, while new economic opportunities may emerge associated with extended "summer-like" conditions.

Bioregional Carrying Capacity

The bioregional carrying capacity refers to the provision of key services for the health and well-being of our population. These services include clean drinking water, clean air, waste management, food security, and the generation of energy.

REGIONAL GROWTH (AND LIMITATIONS TO GROWTH)

Future water supply should be a central consideration when developing strategies to support changing regional demographics and populations. Long-range planners are advised to consider our region's future carrying capacity when planning for regional growth, ensuring substantial additional investments in supporting infrastructure in high-impact areas, and/or potentially limiting growth in these areas. Also, hazards including flooding, landslides, and others will need to be included in future planning frameworks.

MIGRATION TO THE ISLAND (CLIMATE REFUGEES)

Although projections indicate a significant departure from the past, the regional climate is projected to be mild relative to global climate changes, and may lead to new interest in human migration to our region. Our region may need to prepare for an increase in climate refugees, some with means, and others who will likely need support services.

Preparing for the changes ahead will require provincial and regional governments, local authorities, and agencies to work together in developing a local, regional, and bioregional approach.

INFORMATION REPORT TO MUNICIPAL SERVICES COMMITTEE

From: Erin Anderson
Meeting Date: August 14, 2017
File No:

RE: BC Hydro Rates for streetlights and select facilities

RECOMMENDATION:

That the Committee receive the information regarding BC Hydro rates for street lights and select facilities.

PURPOSE:

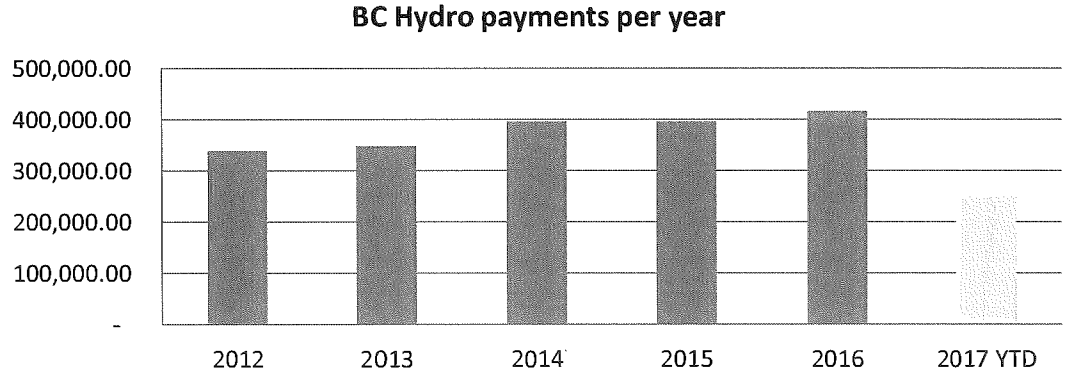
The purpose of this report is to provide information to the Committee regarding the changes in Hydro rates over the last few years.

PREVIOUS COUNCIL DIRECTION

CS 2017 – 151 - Prepare a report on utility costs for the past five years.

DISCUSSION

The Town currently has 55 accounts with BC Hydro; the largest account being the overhead street lights, followed by the Waste Water Treatment Plant and FJCC. The smallest account is for park irrigation. The most recent bill available is from July 2017 for $41,277.72. A bill from the same period in 2012 was for $29,322.35. Since that time, the new Waste Water Treatment Plant came online which is a large consumer of electricity.



The Committee requested information regarding utility accounts for the last 5 years. The earliest detailed information that could be obtained was from 2013.

This report focuses on Street Lights, Ornamental Lights and FJCC.

Street Lights (leased lights)

Street lights are defined by the BC Hydro tariff schedule as *for lighting of public highways, streets, lanes in cases where BC Hydro owns, installs and maintains the fixtures, conductors, controls and poles.*

The total current monthly charge for overhead streetlights, which is a flat rental charge from BC Hydro depending on the wattage, is $8,753.19 plus taxes. It is estimated that the same number and type of units in 2013 would have cost $7,036.71 plus taxes.

Since 2013, 11 additional 150 watt lights were installed and one 100 watt light was removed:

Type of HP Sodium (HPS) Vapour Unit	# units rented in 2017	# units rented in 2013	Difference	2017 Rate[1]	2013 rate	Difference
100 watt	289	290	-1	$ 17.81	$ 14.32	3.49
150 watt	149	138	+11	$ 21.24	$ 17.07	4.17
200 watt	1	1	0	$ 24.52	$ 19.72	4.80

Ornamental Street Lights (Town owned)

Public area ornamental street lighting is defined by the BC Hydro tariff schedule as *for lighting of public highways, streets and lands and municipal pathways and for public area seasonal lighting displays, in those cases where the Customer owns, installs and maintains the standards, fixtures, conductors and controls.*

The current charge for ornamental streetlights, which is a per unit charge, is 3.43¢[2] per watt of Billing Wattage per month. In 2013, the rate was 2.75¢ per watt of Billing Wattage per month. The Town is charged based on the type of unit, as well as the # of watts used:

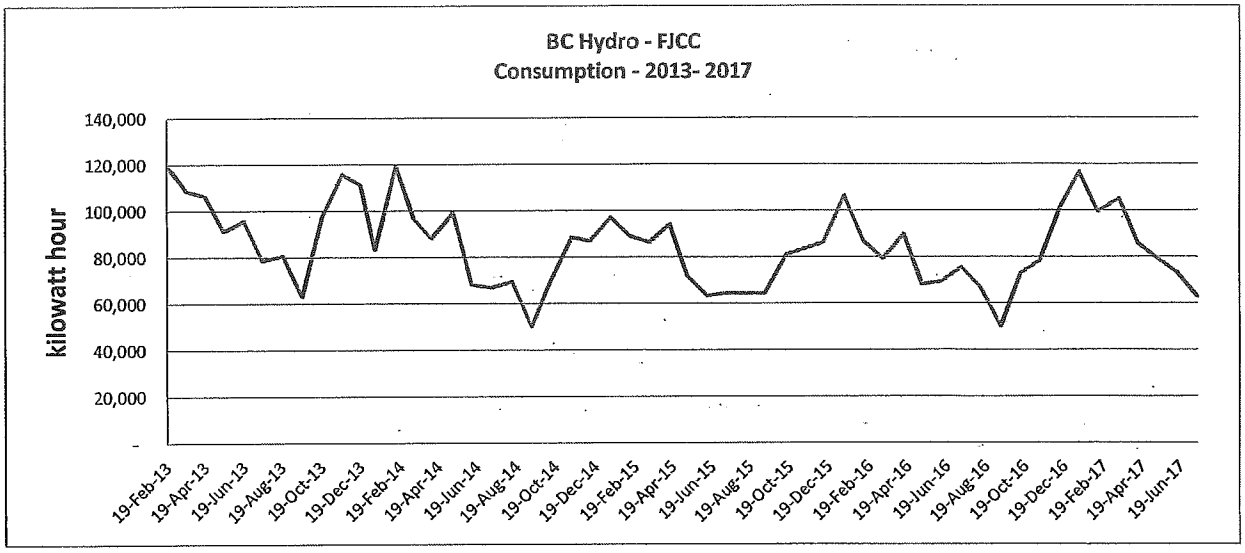
Type of Unit	# units in 2013	Cost per unit 2013	# units in 2017	Cost per unit 2017	Difference in cost/unit
95 watt HPS	6	2.74	6	3.42	0.68
130 watt HPS	88	3.75	92	4.68	0.93
190 watt HPS	111	5.49	116	6.84	1.36
210 watt MV	4	6.06	4	7.54	1.50
116 watt INC	9	3.35	9	4.18	0.83
44 watt LED	-		2	1.58	

[1] BRITISH COLUMBIA HYDRO AND POWER AUTHORITY - Electric Tariff, RATE SCHEDULE 1701 – OVERHEAD STREET LIGHTING, April 1, 2017.
[2] BRITISH COLUMBIA HYDRO AND POWER AUTHORITY - Electric Tariff, RATE SCHEDULE 1702 – PUBLIC AREA ORNAMENTAL STREET LIGHTING, April 1, 2017.

The LED lights are the cheapest option to utilize, though the cost of replacing a LED head is approximately $550.

FJCC: 810 – 6th Ave

Below is a chart of the kilowatt hour at the FJCC location for the period of 2013 to current. The peak consumption is in the winter months. The Committee may recall that an energy upgrade was completed in the spring of 2014.



FJCC was considered a "large general service" rate by BC Hydro. Since April 1, 2017, the rate structure for FJCC changed, making it difficult to compare each component of the rates. The base rate has increase from $0.19530/day to the current rate of $0.24290/day, which is an increase of $0.0476/day. In 2013, there was an energy charge that was broken down based on usage over a fluctuating threshold. A credit could be earned or an additional amount charged depending on consumption. Recalculating a bill from 2013 using today's rates shows an increase of 12% as shown in the table below:

Consumption = 73,200kW.h *Demand = 164* *# days = 30*	2013 Actual	2017 Calculated	Difference ($)	Difference (%)
Base Rate	5.86	7.29	1.43	24%
Consumption	5,732.50[3]	5,346.00	-386.50	-7%
Demand	876.08[4]	2,085.06	1,208.98	138%
Rate Rider (5%)	330.72	371.92	41.20	12%
Total (before taxes)	6,945.16	7,810.27	865.59	12%

[3] Combination of Part 1 & Part 2 charges.
[4] Include the amount charged at 115kW and above

SUMMARY POINTS

In summary, BC Hydro rates have increased and are expected to continue to rise. Facilities, such as the Waste Water Treatment Plant, the Water Chlorinator, FJCC and the street lights continue to be large user of electricity. As the Town builds new facilities, such as the Water Filtration Plant, the cost for hydro will continue to increase.

Erin Anderson, Director of Financial Services

31 July 2017
Date

I concur with the recommendation.

Per

Guillermo Ferrero, City Manager

ATTACHMENT(S)
none

INFORMATION REPORT TO MUNICIPAL SERVICES COMMITTEE

From:	Joanna Winter, Manager of Legislative Services
Meeting Date:	August 14, 2017
File No:	
RE:	DESIGNATION AS BEAR SMART AND / OR FIRE SMART COMMUNITY

RECOMMENDATION:

That the Committee recommend that Council direct staff to continue implementing no cost communication tools for Fire Smart and Wildlife safety awareness and refer consideration of applying for Town of Ladysmith designation as a Bear Smart Community and as a Fire Smart Community to the 2018 budget deliberations.

PURPOSE:

The purpose of this report is to provide the Committee with information related to two provincial programs aimed at addressing issues related to urban/forest interface – Bear Smart and Fire Smart.

PREVIOUS COUNCIL DIRECTION

N/A

DISCUSSION:

Members of Council have requested information on the criteria for becoming a designated Bear Smart and/or Fire Smart community.

Bear Smart Program (BC Ministry of Environment)

The Bear Smart program is a conservation program that encourages communities, businesses and individuals to adopt strategies to reduce bear/human conflict. The intent of the program is to increase community safety and at the same time prevent the habituation and eventual relocation of bears. In order to achieve official Bear Smart designation, communities must meet a series of criteria including:

1. Prepare a bear hazard assessment of the community and surrounding area. A portion of the Port Alberni assessment is attached as Appendix B. This must be carried out by a qualified professional.
2. Prepare a bear/human conflict management plan that is designed to address the bear hazards and land-use conflicts identified in the assessment.
3. Revise planning and decision making documents to be consistent with the bear/human conflict management plan. This includes a review of bylaws and other

relevant community documents to ensure they include appropriate bear management language and policies.

4. Implement a continuing education program directed at all sectors of the community.
5. Develop and maintain a bear-proof municipal solid waste management system (including introduction of bear proof garbage containers.)
6. Implement Bear Smart bylaws prohibiting the provision of food to bears as a result of intent, neglect, or irresponsible management of attractants.

It is estimated that the cost to hire a professional to conduct the assessment, prepare the management plan, review bylaws and documents and develop recommended amendments, and develop appropriate bylaws would be $15,000 to $20,000. The work could be spread over more than one year.

Currently there are 7 Bear Smart communities in BC – Kamloops, Squamish, Lions Bay, Whistler, Port Alberni, Naramata and New Denver. It is estimated that another 20 are working towards achieving the designation.

FireSmart Community Program

FireSmart Canada was created several years ago when Partners in Protection (PiP) , a multidisciplinary non-profit association, made up of members representing national, provincial and municipal associations, government departments responsible for emergency services, forest and parks management, land use planning and private business and industry, was invited by the Canadian Council of Forest Ministers to develop a national fire smart program. As with Bear Smart, there is a series of criteria that must be met in order for communities to be designated as FireSmart.

There are a number of communities and First Nations in B.C. who have achieved FireSmart designation. The full list can be found on the program website at https://www.firesmartcanada.ca/firesmart-communities/provinces/british-columbia/

The process is intended to be driven by local citizen involvement. It is intended to be driven by a community Champion, an individual or organization who takes the initiative to lead the process.

1. Community Representation - The Community Champion -- either an individual, another community organization or the local government -- recruits others from the community to create a FireSmart Board which will include other homeowners and fire professionals and possibly land managers, planners and members of other interest groups.
2. Assessment & Evaluation - Once the request to be a FireSmart community has been submitted to FireSmart, the local FireSmart representative, a specialist in wildland/urban interface (WUI) fire, will visit the area and assess wildfire hazards. The Local FireSmart Representative completes the wildfire hazard assessment and evaluation of the community's wildfire readiness and schedules a meeting with the FireSmart Board to present the assessment for review and acceptance.

3.
4. Moving Forward/Creating A Plan – The local FireSmart Board develops a FireSmart Community Plan (a set of solutions to its WUI fire issues based on the Local FireSmart Representative's report). All members of the FireSmart Board must concur with the final plan which is presented to and approved by the provincial/territorial FireSmart Liaison. The Local FireSmart Representative can work with the community to seek project implementation funds, if needed.
5. Implement Solutions - Solutions from the FireSmart Community Plan are implemented following a schedule designed by the FireSmart Board, who will be responsible for maintaining the program into the future.
6. Apply for Recognition - FireSmart Community recognition status is achieved after the community submits its application form along with a completed FireSmart Community Plan and FireSmart Event documentation to the Local FireSmart Representative.
7. Renewing Recognition Status - Annual renewal of FireSmart recognition is completed by submitting documentation of the community's continued participation to the provincial/territorial FireSmart Liaison.

SUMMARY POINTS

It is recommended that consideration of whether Ladysmith should be a Bear Smart and/or a FireSmart community be referred to the 2018 budget process, as there are costs involved with achieving the designation in addition to staff time for coordination and supporting implementation. Should Council desire, community polling about these initiatives cold take place in the meantime through PlaceSpeak and other means of community engagement. In the meantime, staff have taken steps to include Bear Smart and FireSmart information and resources on the Town's website to raisae public awareness and engage citizens in helping to address both issues.

August 8, 2017

I concur with the recommendation.

Per

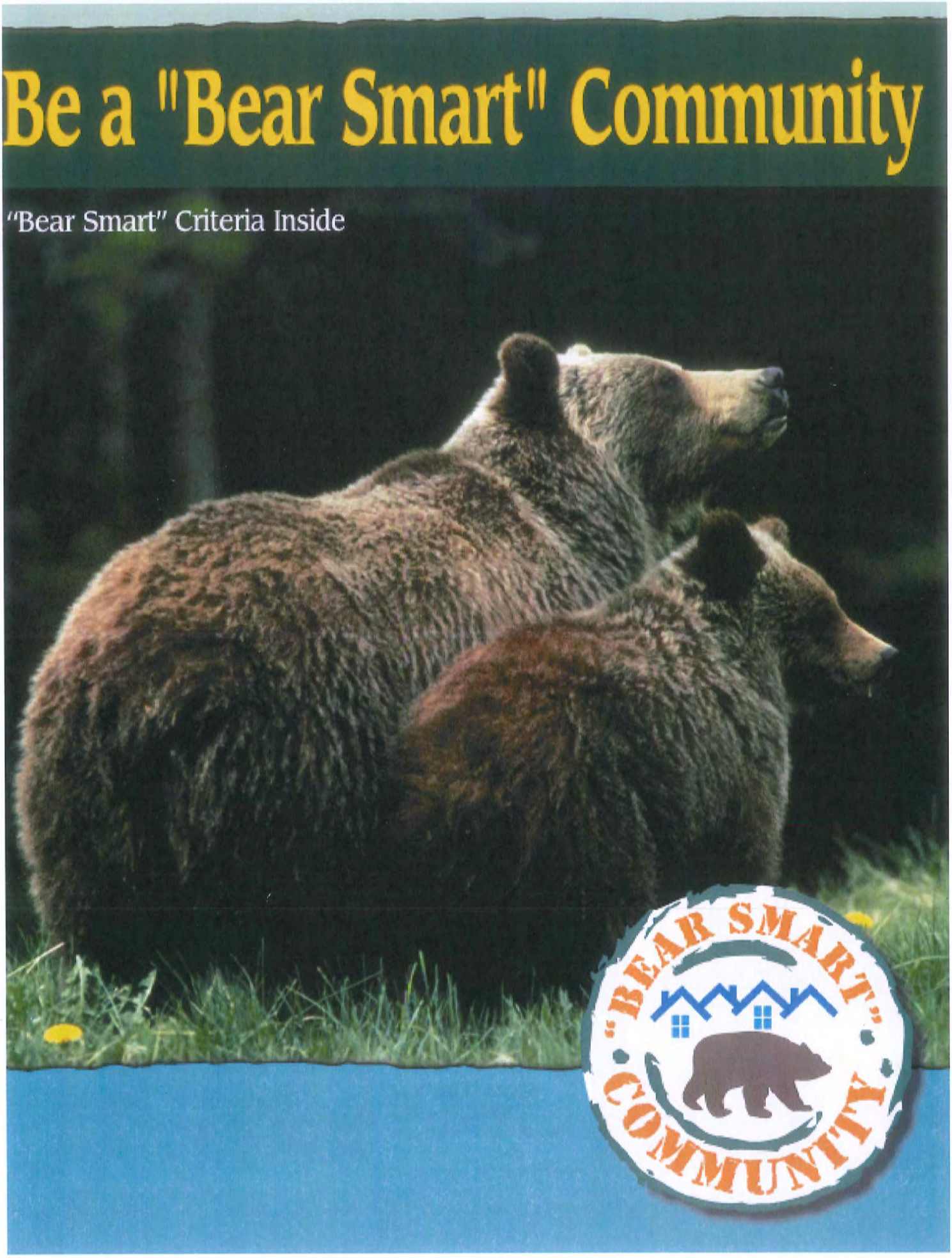
Guillermo Ferrero, City Manager

ATTACHMENT(S)

Bear Smart Program brochure
Excerpts from Port Alberni Bear Smart Hazard Assessment

Be a "Bear Smart" Community

"Bear Smart" Criteria Inside



The Problem.

During bear season, Conservation Officers (COs) in British Columbia respond to thousands of calls and complaints about bears. Most of these problems begin when people allow bears to access non-natural food sources. Unfortunately, because there are few alternative control methods once bears have learned to access human food, Conservation Officers often have no choice but to kill "problem" bears.

Each year in British Columbia approximately 950 black bears and 50 grizzly bears are destroyed as a result of conflicts between people and bears.

Sources of Bear "Problems"

Access to Human Food

If bears are allowed to access human food and garbage, they quickly learn to associate it with people and become what is called food-conditioned. These bears lose their fear of humans and become habituated to people.

As people continue to encroach on bear habitat the potential for this conflict only increases.

Food-conditioned bears learn to expect human food and are more likely to approach people than wild bears. These bears can damage your property and they are a potential risk to you and the safety of your family. In most cases, however, when a bear comes into conflict with people, it's the bear that loses.

Human Development

Both bears and humans like to settle in valley bottoms and along streams. More development is occurring in these areas, meaning that bears will be living in closer proximity to people. Bears that live near human settlements can become "problem" bears if they are allowed to access non-natural foods.

"Problem" Bear Costs

Problem bears cost British Columbia taxpayers big money. The British Columbia Conservation Officer Service spends more that $1 million every year responding to bear complaints and relocating or destroying bears. Property damage, which is not included in this figure, is estimated to be in the hundreds of thousands of dollars a year. Bears damage household items, fruit trees, apiaries, livestock and vehicles.

Once bears learn to access human food, management options, besides destruction of the bear, are limited.

Bears in dump at Whistler 1993.
© Photo courtesy of Dan LeGrandeur

What is "Bear Smart"?

Management Options

The "Bear Smart" Community program is a proactive conservation strategy that encourages efforts by communities, businesses and individuals to reduce bear/human conflicts. The goal of the program is to focus efforts on addressing the root causes of bear/human conflicts, reduce the number of conflicts and, ultimately, reduce the number of bears that have to be destroyed due to conflicts.

This program will be based on a series of criteria that communities must achieve in order to be designated as "Bear Smart". It is a co-operative venture and entirely voluntary on the part of communities. The responsibility to manage bear/human conflicts rests with everyone and it will require participation from the provincial government, municipal governments, and local citizens to successfully implement this program.

Translocation

Translocation is one management option available. Bears are trapped, moved and released into the wild. Translocation, however, is rarely successful as often these bears return to their original home territory, or they become "problem" bears in other communities. In addition, translocated bears often fail to adapt to their new habitat - they likely starve to death or are killed by bears that already occupy the territory.

Aversive Conditioning

"Bear Smart" Communities will have more management options to deal with bear conflicts such as hazing or aversive conditioning. This involves using deterrents to teach the bear to associate humans or human food with a scary or negative experience. Bear deterrents include: rubber bullets, plastic slugs, anti-riot batons, foul-tasting chemicals, electric shock, acoustic devices and trained bear dogs.

Hazing and aversive conditioning are most effective when they are used to prevent bears from becoming conditioned to human food. They are not considered effective once bears have already learned to associate food and people. Within "Bear Smart" Communities, however, fewer bears will be coming into conflict and those that do will not be receiving a readily accessible food reward. Therefore, hazing and aversive conditioning of bears will only be considered as options in communities that are designated as "Bear Smart".

Criteria for Communities to Achieve "Bear Smart" Status

1. **Prepare a bear hazard assessment of the community and surrounding area.**
2. **Prepare a bear/human conflict management plan that is designed to address the bear hazards and land-use conflicts identified in the previous step.**
3. **Revise planning and decision-making documents to be consistent with the bear/human conflict management plan.**
4. **Implement a continuing education program directed at all sectors of the community.**
5. **Develop and maintain a bear-proof municipal solid waste management system.**
6. **Implement "Bear Smart" bylaws prohibiting the provision of food to bears as a result of intent, neglect, or irresponsible management of attractants.**

Criteria for Communities to be Designated "Bear Smart"

1. Prepare a bear hazard assessment of the community and surrounding area.

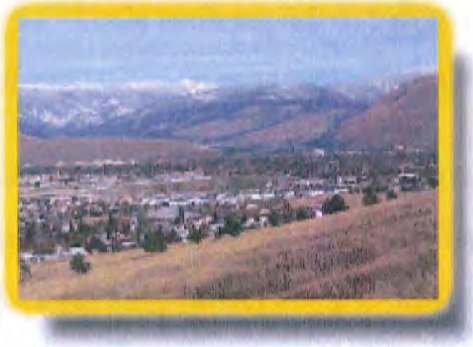
Identify high-use bear habitat by species (grizzly or black) in the community and surrounding area (travel corridors, natural food sources such as berry patches and salmon streams, breeding areas, denning areas, etc.)

Map non-natural attractants within the community and surrounding area that attract and/or are accessible to bears such as landfills, transfer stations, park and highway pull-out litter barrels, orchards, residential garbage collection routes, downtown dumpsters, etc.

Review and map patterns of historic bear/human conflicts based on complaint records to assist with the identification of bear hazards.

Map human-use areas that may conflict with bear habitat such as school yards and residential areas located adjacent to heavy bush, walking trails that pass through berry patches, etc.

Using all the above information, identify and map existing and potential bear hazards. The hazards should be mapped with a ranking scheme (e.g., high/moderate/low)



Bear/Human Conflict Management

2. Prepare a bear/human conflict management plan that is designed to address the bear hazards and land-use conflicts identified in the previous step.

Develop strategies to resolve bear hazards and potential bear/human conflict areas.

Identify preferred wildlife movement corridors around the community and any work required to restore natural corridors that may have been interrupted by human activity/development (e.g., this may require moving existing facilities to other, less intrusive areas).

Direct the removal of cover by brushing vegetation to reduce hazards (e.g., removing brush around portions of parks, school yards, golf courses and in areas adjacent to residences in high-risk attraction areas).

Develop a community landscape plan that avoids the use of fruit trees and other plants that may act as attractants and calls for the removal of existing fruit trees that are causing problems. Include specific strategies to address bear management associated with any landfill closures or electric fence installations.

Assess the costs of the various bear management strategies and make recommendations on a budget cycle to finance implementation of the plan.

Implement a process for overseeing the implementation of the bear/human conflict management plan (e.g., establish a bear/human conflicts committee).

3. Revise planning and decision-making documents to be consistent with the bear/human conflict management plan.

Include consideration of important bear habitat/use areas in all land-use decisions documents.

Avoid development in prime bear habitat so as to reduce/eliminate the potential for bear/human conflicts.

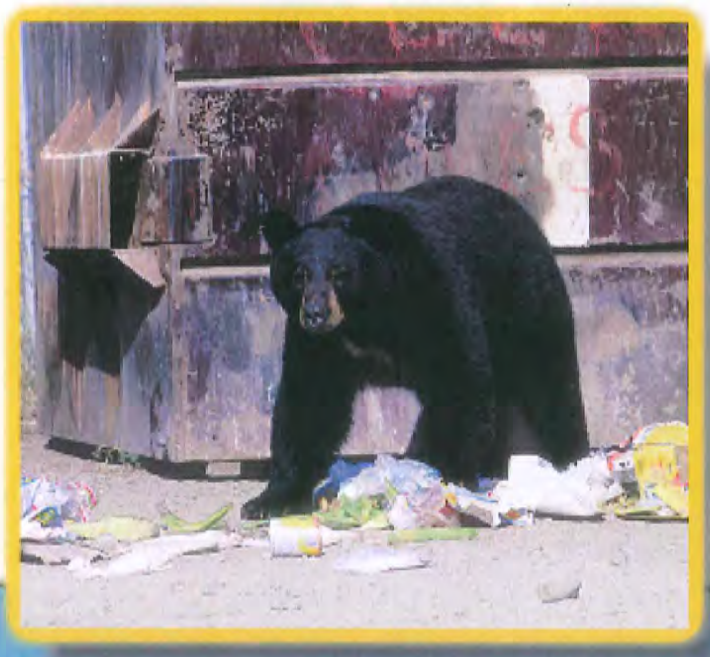
Revise the Official Community Plan to reflect the bear/human conflict management plan.

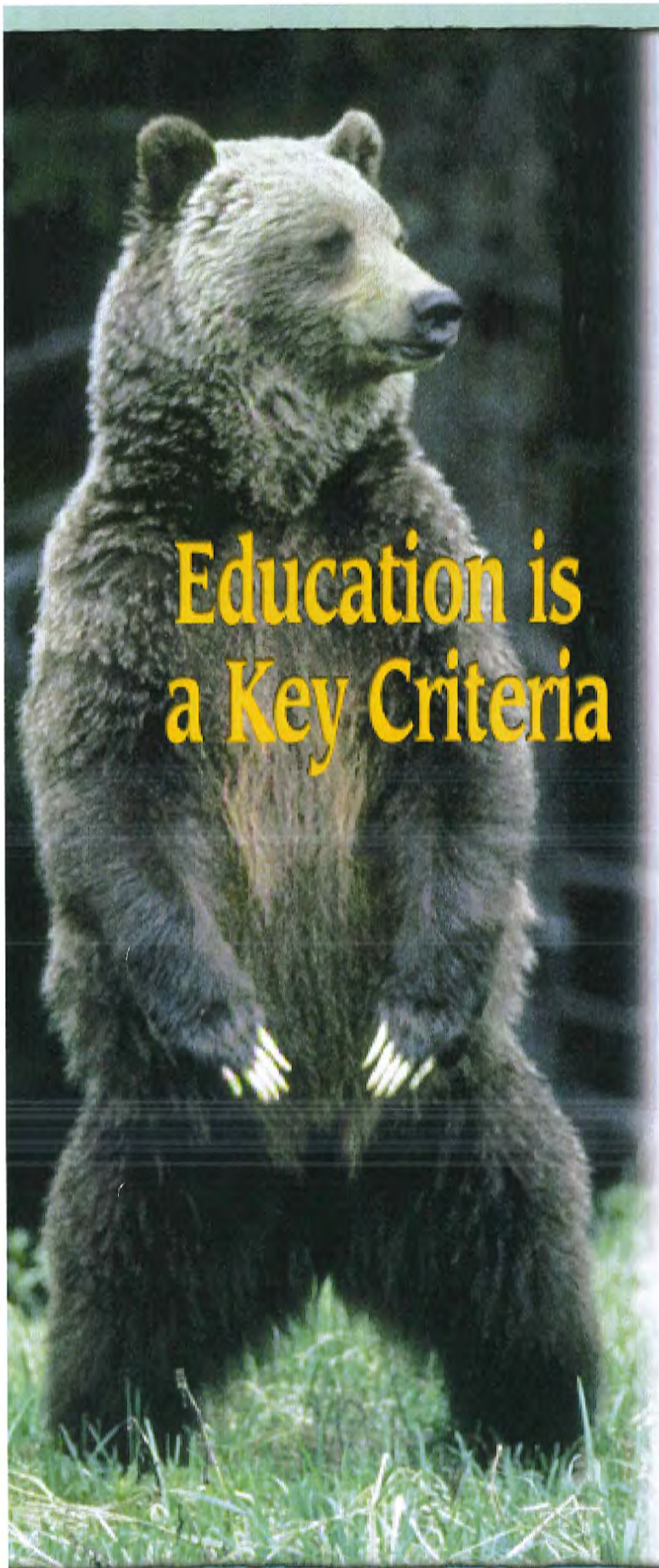
Implement restrictive covenants consistent with the revised OCP.

Revise land zoning consistent with the revised OCP.

Revise components of the Regional Solid Waste Management Plan pertaining to the community (in cooperation with the regional district) to be consistent with the bear/human conflict management plan.

Revise any other planning and decision-making documents that may have an impact on bear/human conflicts to be consistent with the bear/human conflict management plan.





Education is a Key Criteria

4. Implement a continuing education program (i.e. Bear Aware), directed at all sectors of the community focusing on:

Bear biology and behaviour

Residential, commercial, agricultural and industrial practices to manage non-natural attractants including: garbage storage, barbecues; human and pet foods; compost; birdfeeders; orchards,vineyards, apiaries, grain growing, vegetable growing, home-grown fruit; etc.

Proper behaviour in bear habitat and during a bear encounter in the community.

Establishing a level of tolerance towards the presence of and natural behaviour of bears in reasonable numbers in or near the community.

A program for communicating current bear activity to the public and responding to requests for advice in minimizing bear attractants.

Bear Aware is an initiative to reduce bear-human conflicts in residential areas throughout British Columbia.

Guided by the British Columbia Conservation Foundation, with funding and support from various levels of Government and private organizations, the Bear Aware program promotes practices that improve public safety and respect for wild bears.

For more information or to establish a local program for your area call 250/828-2551. Or, visit the website: **www.bearaware.bc.ca**

Bear aware

Solid Waste Management

5. Develop and maintain a bear-proof municipal solid waste (MSW) management system.

Ensure that any and all municipally-owned and operated components of putrescible MSW collection, transfer, disposal, recycling and composting in areas that are accessible to, or are frequented by, bears are bear-proof.

Implement a by-law to ensure that the same is true of any and all private sector components of putrescible MSW collection, transfer, disposal, recycling and composting (see criteria #7).

Implement a compliance strategy for the municipal solid waste management bylaws to ensure compliance.

Examples of some "how to" approaches for bear-proofing MSW systems:

Collection shall include use of bear-proof litter barrels on downtown streets which bears may be attracted to and at all municipal park facilities (campsites, ball parks, soccer fields, etc.)

Commercial/industrial collection routes in bear areas shall use bear-proof dumpsters.

Disposal shall consist of one of the following: landfilling inside a properly designed, constructed and operated electric fence; incineration using a complete-combustion incinerator properly sized to the population; or a bear-proof transfer station that ships the refuse outside of the area to a bear-proof disposal facility.

Backyard composting may need to be restricted in residential areas adjacent to high-use bear habitat or otherwise required, by bylaw, to be conducted in a bear-proof manner (e.g., use of electric fencing in backyards, or use of bear-proof composting containers such as steel drums).

Community composting of putrescible matter in bear areas shall be conducted inside an electric fence.

Legislation

There is legislation in effect that can help prevent the creation of "problem" bears and provide public safety. Under the *Wildlife Act*, it is an offense for people in British Columbia to feed dangerous wildlife (bears, cougars, coyotes and wolves) or disobey orders to remove and clean up food, food waste or other substances that can attract dangerous wildlife to their premises.

Conservation Officers may issue a written dangerous wildlife protection order, which requires "the removal or containment of compost, food, food waste or domestic garbage." If people fail to comply with the order they could face a penalty of up to $50,000 and/or six months in jail.

Bylaws to Promote "Bear Smart" Actions

6. Implement "Bear Smart" bylaws prohibiting the provision of food to bears as a result of intent, neglect, or irresponsible management of attractants. Implement a compliance strategy for these bylaws to ensure that there is full compliance with them. Bylaws may:

Make it an offence to discard or store waste, food, or other attractants in non-bear proof containers, either intentionally or unintentionally,

Require that garbage be stored in a bear proof container and/or location and that curbside placement before the morning of pick-up not occur,

Include community composting requirements in high-risk attraction areas of the community.

The primary goal of the "Bear Smart" program is to diminish the rate and intensity of human-bear conflicts, which will thereby increase public safety and reduce the number of bears that are killed. Using proactive management, communities can reduce conflicts between humans and bears by identifying and eliminating the root causes of the conflicts. The "Bear Smart" Community Program provides communities with options for addressing their own unique situation and helps them reach the objectives of the program.

The Ministry of Water, Land and Air Protection will provide technical advice to communities that are seeking to obtain "Bear Smart" status. Several British Columbia communities have been proactive in reducing bear conflicts a]nd have already met one or more of the criteria required to be "Bear Smart". A background report providing detailed information on each of the criteria and including examples of their successful application has been prepared and is available to communities that are interested in pursuing this initiative. The Report entitled the "Bear Smart" Community Program: Background Report can be found on the Internet at http://wlapwww.gov.bc.ca/wld/documents/bearsmart_bkgdr.pdf.

For further information on the "Bear Smart" Communities program please contact your local office of the Ministry of Water, Land and Air Protection.

BRITISH COLUMBIA

UNION OF BRITISH COLUMBIA MUNICIPALITIES

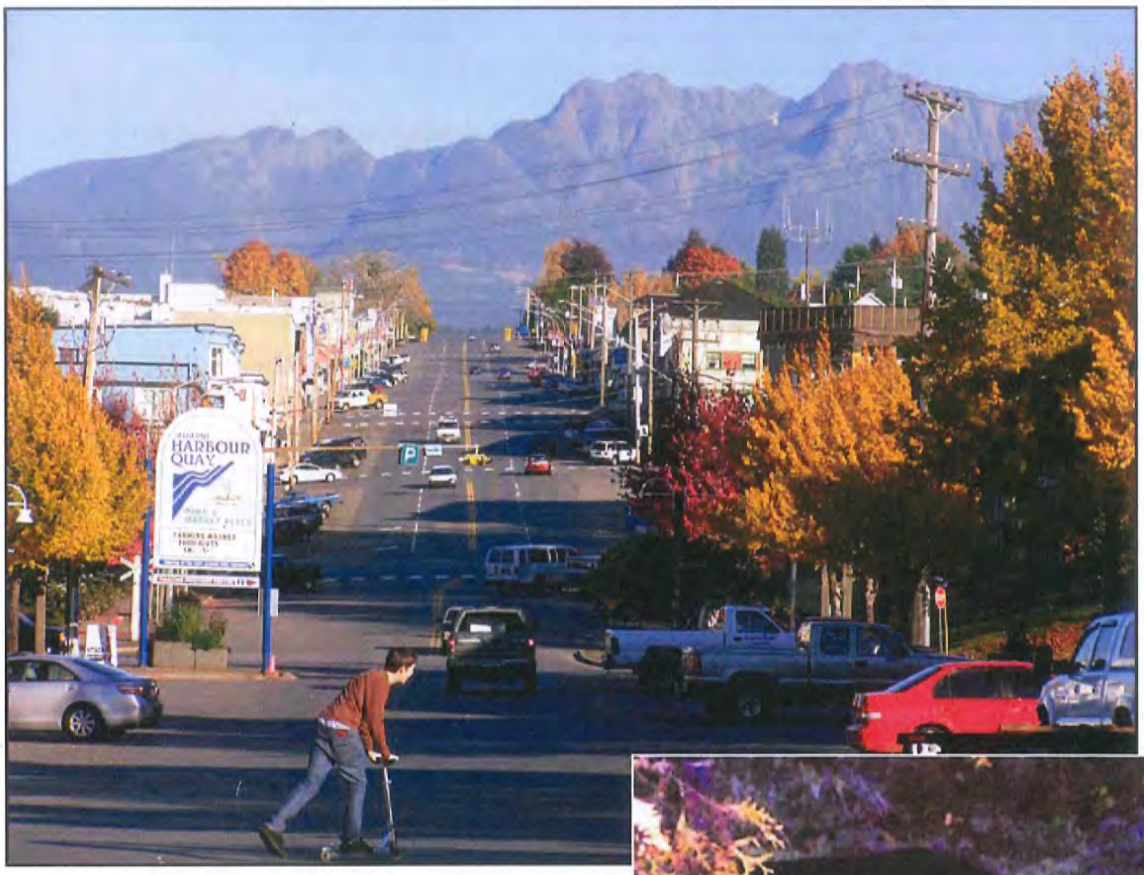
BRITISH COLUMBIA CONSERVATION FOUNDATION

HABITAT CONSERVATION TRUST FUND

Center For Wildlife Information
www.BeBear Aware.com

Bear Hazard Assessment Report
Port Alberni, British Columbia

Bear Smart Community Program, Phase I



November 2007

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Acknowledgements

The writer received input and assistance from District Conservation Officer Ben York and CO Mike Stern, particularly with respect to obtaining data on bear-people conflicts in and surrounding the City of Port Alberni. Thanks to Ben and Mike, too, for their support in making presentations to the Port Alberni City Council on the status of bear-people conflicts in the city.

The writer also thanks Port Alberni Mayor and City Councillors for approving the application to the Conservation Officer Service, Bear Smart Community Program for the funding for this report. City Clerk Russell Dyson was most helpful in the administration of this project. Cara Foden, Planning Technician in the Planning Department, was generous with her time and expertise in providing me with city maps; I am grateful for her heroic efforts to produce the bear-sightings maps contained in this report. Other city staff and school district employees also contributed to the report.

Many thanks go to Greg Freethy at ADSS, and two student assistants, Kristy Aikman and Marinka Kurucz, for helping me map the bear-people conflict reports.

I would also like to thank a handful of Port Alberni residents who freely contributed their stories about their experiences with bears (even when some of those calls came in the middle of the night!).

I'd also like to thank Bear Smart Communities Coordinator Mike Badry of the BC Ministry of Environment, Wildlife Branch, who provided information and advice.

I would like to acknowledge the expertise and advice contained in the report: *"Bear Smart" Community Program: Background Report*, by Helen Davis, Debbie Wellwood, and Lana Ciarniello; and in the report *Hazard Assessment of Bear-Human Conflict in Stewart, British Columbia—Phase 1*, by Debbie Wellwood, RPBio, Raven Ecological Services, Smithers, BC. As well, the MSc Thesis of Helen Davis, *Characteristics and Selection of Winter Dens by Black Bears in Coastal British Columbia*, 1996, also informed this report. Ms. Davis' thesis offered considerable insight into the behaviours and habitat requirements of black bears on Vancouver Island, which are a subspecies of North American black bears distinct from the subspecies found on mainland BC.

Bear biologist Wayne McCrory (RPBio), of McCrory Wildlife Services, New Denver, BC, continues to mentor my work in this field. For his advice, assistance, and moral support, I am truly grateful.

Sean Sharpe, RPBio, of the BC Environment Ministry, Prince George, also continues to review my work and offer advice and support, for which I thank him from the bottom of my heart.

Most of the photos in this report are by the writer. Others were borrowed from other reports with permission from the Bear Aware Coordinator (Lions Bay-Norma Rodgers and Lawrence Ruskin, Coquitlam-Drake Stephens, Squamish-Kris Hopping, Sunshine Coast-John Kelly and Lisa Waldie).

Maggie Paquet, Port Alberni, BC

Disclaimer

Maggie Paquet gathered the research and prepared this document. It has been done in accordance with the BC Bear Smart Community Program guidelines for a bear hazard assessment. While it contains the best possible information available for the City of Port Alberni, no liability is assumed with respect to the use and application of the information contained herein.

Cover photos: View up Argyle Street from Harbour Quay, Credit: M Paquet. Inset: Crepuscular (at dusk or early dawn) behaviour of local bear, Credit: Emma Colyn.

Table of Contents

SUMMARY

The City of Port Alberni expressed interest in reducing conflicts between bears and people in the city, and to increasing safety for residents. The city commissioned this bear hazard assessment to determine how to achieve that goal. This report represents the city's first step in becoming a Bear Smart Community and is the foundation for a future Bear-People Conflict Management Plan for Port Alberni.

The report describes the province's Bear Smart Community Program, how this assessment was conducted, the ecosystem conditions in which the city is situated that predisposes it to conflicts between people and bears, the number and types of bear-people conflicts over various annual periods, and explains the need for an ongoing public education and bear-human conflict monitoring program. The ecology and behaviour of black bears are briefly described so readers can understand some of the basic reasons people and bears come into conflict with each other in this study area.

Port Alberni is located in the central part of Vancouver Island at the head of Alberni Inlet, a roughly 60-km fjord trending northerly from the Pacific Ocean. The city is bordered on the west by the Inlet and the Somass River, and on the north, east, and south by forests and mountains. It is dissected by at least four fish-bearing creeks (Ship, Dry, Roger, and Kitsuksis) and smaller tributary creeks (Owatchet, Treehouse, Weaver, and Lugrin), some of which are fish-bearing at various times of year.

The area has been inhabited by First Nations people for thousands of years, and by European, then Asian, settlers for the past about 150 years. A natural deep-sea port and dense coastal forests, along with once-rich fisheries and marine resources, historically provided ample habitats for both people and wildlife, including deer, elk, cougars, and black bears.

Juxtaposed in an ecological transition zone between the wet Pacific coast and the dry conditions along the Strait of Georgia, and couched in a valley among the Inland Vancouver Island mountains along with the Somass-Stamp river system, Sproat and Great Central lakes, and the marine environment of the Inlet, the Alberni Valley is an exceptionally diverse ecosystem that contains prime black bear habitat. As well as the creeks, there are ravines, roads, and hydro and railroad rights-of-way that provide natural and man-made travel routes to enable access for bears into and throughout the city. When the residential, industrial, recreational, and commercial uses of the area are superimposed onto the natural habitats, there is high potential for conflicts between people and bears.

Like most areas in southwestern British Columbia, the Alberni region is currently experiencing extensive residential development and industrial logging activities. Together, these are having effects on regional wildlife populations and their habitats. In recent years, bears have moved into settled areas in higher numbers than in the past. A city resident[1] stated that she has lived at the interface between the city and the forest all her life and rarely saw a bear. She said it's only been in the last half-dozen years that she now sees bears fairly often and has noticed problems with them getting into people's garbage and fruit trees. Other long-time residents corroborate this comment.

The increasing amounts of wildlife habitat loss and alienation due to urban and industrial development, as well as increased disturbance from recreational and tourism activities throughout the entire region has created an expanded interface between settled and previously wild areas and is resulting in an increased number of interactions between people and black bears.

In order to determine what actions the city needs to undertake to reduce bear-people conflicts, a thorough review of the province's bear complaint database (which details complaints from city residents to the Wildlife Call Centre in Victoria) was conducted. This research revealed that for the size of the city, Port Alberni residents report a high number of complaints. The years 2004-2005 saw a dramatic increase in these numbers, and a comparatively high number of bears were translocated or destroyed, particularly in 2005 and 2006. So far in 2007, this trend has continued.

[1] Rita LaJeunesse, pers. comm., Aug 2007.

The report describes the city's waste management system and bylaws regarding garbage and the landfill (which are shared with the Alberni-Clayoquot Regional District) in relation to how they may or may not help to restrict access to garbage and other attractants by bears. The regional district is currently engaged in a review of solid waste management; new bylaws and equipment are anticipated to be in place in the near future that will significantly reduce access to garbage by bears.

The report discusses the potential risks and hazards at schools and parks in the city. It presents a review of the city's Official Community Plan and development policies in the context of how these may or may not enable community members and local businesses to be Bear Smart. Finally, the report lists a number of recommendations on how the City of Port Alberni can reduce conflicts between people and black bears, reduce property damage, increase safety for city residents, and become a Bear Smart community.

In 2004, Alberni area residents made 410 calls to the provincial Wildlife Call Centre. In 2005 and 2006, they made 505 and 381 calls, respectively. So far in 2007, over 330 calls have been made by mid-October, with the prospect that the final number for 2007 will be greater than in 2006. Considering that the number of calls represents only about 25 to 30 percent of the actual interactions people have with black bears, these numbers indicate there are well over 1,000 incidents in any given year that are not reported. This means that city residents experience a lot of "unease" about bears. In 2006, Conservation Officers had to destroy 12 black bears. For all years, the majority of bears were destroyed or moved because they were attracted to people's homes or commercial areas primarily by garbage, and, to a lesser extent, by fruit trees and gardens (mostly grapes).[2] In addition to bears destroyed by the COs, some residents, mostly in rural areas, shot bears they felt were a threat to their safety, pets, or livestock. There was also a disturbingly high number of reports of injured bears and orphaned cubs sighted (50 reports for 2004-2006).

Currently, Port Alberni has no volunteer group focused on bear-people conflicts or ongoing monitoring activities (as there are in Whistler, Squamish, Lions Bay, the North Shore, and many other locations in the province). This is not to say, however, that there is no public interest in the issue. The writer has received numerous phone calls and emails from city residents and local media to request information and advice about "problems" with bears. As an indication of the growing concern about bears, in 2007, the regional district allocated funds to the BC Conservation Corps to enable Crystal McMillan, Bear Aware Program Supervisor for Vancouver Island & Lower Mainland, to extend delivery of the Bear Aware Program to Port Alberni. Details on this are described in section 3.6.

Using information from the CO Service database, the interactions between bears and city residents were mapped. Locations assessed include school grounds; city parks; residential, commercial, and industrial areas; and known bear movement corridors (largely along streams, trails, and ravines). The types of complaints reported include property damage, strewing garbage around, damage to fruit trees and gardens, getting into compost, and just plain scaring people so they don't feel safe.

Analysing this complaint data revealed that the primary attractant—by far, and in every neighbourhood and throughout every season—was garbage, both residential and commercial. The next most common attractants were found to be fruit trees, gardens and composts, birdfeeders, and, to a far lesser extent than expected, wild berries (e.g., Armenian blackberry and salmonberry). A significant percentage of property damage was reported (7% to 12% of all reports in each year; mostly to fences, sheds, and loss of livestock). Generally, people expressed strong concerns for their own and their children's safety. Misinterpretation of bear behaviour (interpreting it as aggressive rather than more correctly as defensive) was common. All this shows the need for wider understanding of bears—their ecology and behaviours—in order to increase people's understanding of why they are having conflicts with bears, to increase their tolerance for bears and their feeling of safety, and to significantly reduce property damage and attracting bears to residential and commercial areas within the city.

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[2] MOE, CO Service data. Information on translocation and destruction of bears was severely limited (scant) over the study period. There may have been more bears moved and destroyed than available records indicate.

School staff throughout the city showed a good general knowledge of the relationship between garbage and the occurrence of bears on school grounds, although there is room for improvement at some of them when it comes to putting this knowledge into practice.

City parks were assessed and assigned hazard ratings, as were randomly sampled residential, commercial, and industrial sites. Nearby national, provincial, and regional parks and trails, while not assessed, are described in the context of presence of bear habitat and safety considerations.

Reviewing a local government's vision statements for its parks and recreation facilities, its bylaws, its strategic and official community plans, and development or zoning policies is an important aspect of all bear hazard assessments. What is required is evidence that these show an awareness of and consideration for the behaviours and ecological requirements of bears and the need to maintain safe distances between people and bear use areas. Neither Port Alberni's Strategic Plan and OCP, nor any of its vision statements, bylaws, or development/zoning policy statements currently contain language about restricting bears' access to non-natural attractants (including garbage and landscape plantings), environmental considerations specifically relevant to bears, the ways bears use habitats, or how development practices can be designed to minimise the potential for bear-people conflicts. The regional district's proposed Solid Waste Management Plan does recognise this need, however, and when it is implemented, will cover the city. What remains to be done is to include some specific Bear Smart language and practices in the city's bylaws, OCP, and other planning documents and policies.

The Ahahswinis Reserve of the Hupacasath First Nation, while a separate jurisdiction, is within the boundary of Port Alberni. With permission, this area is included in this bear hazard assessment.

The recommendations listed at the end of this report are intended to assist the city in reducing bear-people conflicts over time. Phasing-in the recommendations over a five-year period allows for better understanding and compliance by the public, helps keep costs affordable, and allows for modifications to suit local conditions.

Summary Recommendations

A full list of recommendations is given in section 4. The following are those the author feels should be instituted as soon as possible in order to effect an immediate reduction of bear-people conflicts.

Amend the waste management bylaw so residential garbage bins can only be put out on the morning of collection day, and require these bins to be bear-proof. Enforce the bylaw.

Conduct a detailed habitat assessment specifically to inform the OCP and other development plans in order to minimise the potential to result in additional conflicts with bears in new development areas.

Amend the OCP to include language indicating the City's intention to consider bear habitat and travel corridors in development permits to help minimise the potential for bear-people conflicts.

Install bear-proof garbage bins in public places, including in city parks and at minimal, but strategic, locations along walkways and trails.

Enact bylaws that require housing complexes, schools, institutions, and businesses (e.g., delis, restaurants, grocery stores) to use only bear-proof garbage bins and dumpsters, or to place existing bins and dumpsters (and grease bins) inside secure bear-proof enclosures.

Enact bylaws that require all new housing, commercial, and industrial developments within the city to "build in" bear-proof waste management practices and equipment at the time of development.

Enact bylaws that require industrial businesses (e.g., fish plants, sawmills, the paper mill) to install and maintain bear-proof fencing around their dumpsters, and perimeters where necessary, including bear-proof gates that are kept securely closed.

Increase informational signage about bears in parks and trails, including temporary signage when bears have been sighted in a particular location.

Engage in public consultation to find effective ways to prevent conflicts between bears and people.

Establish a dedicated ongoing public education and bear-people conflict monitoring program that includes direct liaison with the area's Conservation Officers and RCMP.

Harmonise Bear Smart practices with adjacent ACRD electoral areas so efforts in Port Alberni are not defeated by lack of effort outside its immediate boundary.

Commission a Bear-People Conflict Management Plan (according to the requirements stated in the BC Bear Smart Community Program) for staged implementation over a 3- to 5-year period.

By agreement, the deliverables of this Bear Hazard Assessment are:

1. Local and regional context maps that show habitats potentially suitable for use by bears, and that indicate likely bear movement corridors in and surrounding Port Alberni (e.g., rivers and creeks).
2. City maps that identify locations of bear-people conflicts based on Wildlife Occurrence Reports from the CO Service. These will indicate the neighbourhoods that pose varying degrees of risk for conflicts with bears, and are accompanied (within the body of the report) with an analysis of the data and a discussion of the patterns of bear-human interactions in Port Alberni.
3. Discussion of current and potential bear hazards at high human use areas (parks, schools, etc.).
4. Reviews of public education activities to reduce bear-human conflicts, bylaws governing waste management practices, and the City's Official Community Plan and development policies.
5. Recommendations for reducing the potential for bear-human interactions and increasing the safety for people and property throughout the city. These recommendations, along with the information contained in the report, will form the basis of a Bear-People Conflict Management Plan for the City of Port Alberni, which is Phase II of the Bear Smart Community Program.

This report fulfils the BC Environment ministry's requirements for Phase I of the Bear Smart Community Program and conforms to the ministry's standards for future achievement of Bear Smart Community status for the City of Port Alberni, BC. Copies have been provided to the following:

Russell Dyson, City Clerk
City of Port Alberni
4850 Argyle Street
Port Alberni, BC V9Y 1V8
Ph: 250-720-2810
email: Russell_Dyson@portalberni.ca

Mike Badry, Wildlife Conflict Prevention Coord.
BC Ministry of Environment
PO Box 9376, Station Prov. Gov.
Victoria, BC V8W 9M5
Ph: 250-387-9793
email: Mike.Badry@gov.bc.ca

Ben York, District Conservation Officer
BC Conservation Officer Service
4885 Cherry Creek Road
Port Alberni, BC V9Y 8E9
Ph: 250-731-3082
email: Ben.York@gov.bc.ca

Lance Sundquist, Enforcement Manager
BC Ministry of Environment
2080 Labieux Street
Nanaimo, BC V9T 6J9
Ph: 250-751-3119
email: Lance.Sundquist@gov.bc.ca

Data was collected under a research agreement between the writer and the BC Ministry of Environment. All personal information (including names, specific addresses, contact information) was removed from individual complaint reports and the locations were generalised to the 100-block of a street. Upon finalising the report, all data were deleted from the writer's computer and paper copies were shredded.

Introduction to the Bear Smart Program

Bear Smart is a community-based program announced in 2002[3] to reduce conflicts between people and bears, and to increase safety for people. It is sponsored by a partnership of the BC Water, Land & Air Protection (now Environment) ministry, Union of BC Municipalities, and BC Conservation Foundation.

Every year in British Columbia over 1000 black bears and 50 grizzly bears are destroyed because of real and perceived threats to people and property. As our province becomes more settled, and with increasing and more widespread access to backcountry and wilderness areas, these numbers continue to increase. If we do nothing, we cannot achieve sustainable management of wildlife.

At one time, we assumed bear-human conflicts occurred because of "problem" bears; that the bears themselves were responsible. Today, we know that conflicts are primarily due to our own behaviours. We've learned that "the natural ecology of the bear plays only a small role in the development of problems."[4] The larger role is played by people and, therefore, the solution needs to come from us.

In past years, government policy for managing bear-human conflict has been to trap and move a "problem" bear to another area, or simply to destroy it. This is a reactive approach because it attempts to manage a problem after it has developed and doesn't serve either bears or the public very effectively. It costs over a million dollars a year for conservation officers to respond to the thousands of calls, takes time away from their many other responsibilities, and often results in needless destruction of bears. In recent years, public education has been recognised as a more effective means of reducing conflicts between bears and people. New policy acknowledges the need for a proactive approach.

The Bear Smart Community program is proactive because it seeks to prevent problems. It guides communities toward a safer and more sustainable way for people and bears to co-exist. It does this through a variety of activities, principally by focusing on public education about bears and on how people can prevent conflicts with bears, largely by removing non-natural attractants from communities. It is also an incentive for municipalities to adopt more sustainable waste management practices.

CRITERIA FOR COMMUNITIES

The government program requires communities to meet the following six criteria in order to be designated Bear Smart:

1. Prepare a bear hazard assessment of the community and surrounding area.
2. Prepare a management plan based on the bear hazards and land-use conflicts identified in #1.
3. Revise planning and decision-making documents to be consistent with the management plan.
4. Implement a continuing education program directed at all sectors of the community.
5. Develop and maintain a bear-proof municipal solid waste management system.
6. Implement Bear Smart bylaws that prohibit the provision of food to bears as a result of intent, neglect, or irresponsible management of attractants.

A TWO-PHASE PROCESS

Achieving Bear Smart Community status is a two-phase process. In Phase I, the sources of potential bear-human conflicts in the community are identified and mapped. This involves identifying natural and non-natural attractants and showing where in the community they occur; identifying locations in the community where there is potential for conflicts, mapping those, and assigning a risk level.

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[3] See ministry Press Release and Backgrounder dated June 24, 2002 in Appendix 1.

[4] Davis, H.; D. Wellwood; and L. Ciarniello. 2002. *"Bear Smart" Community Program: Background Report.* BC Ministry of Water, Land and Air Protection. Victoria. p. 1.

Bear Aware Coordinator in Coquitlam delivering a public education program in a city park. City employees were also present to discuss waste management bylaws and programs. M. Paquet photo

Phase I also requires that communities be actively engaged in educating the public about the causes of bear-human conflicts and how to reduce their numbers. The Bear Smart Community program is designed to be adaptive so that new management options or improvements can be incorporated into each step. Criteria for each step in the process are provided so that communities have clearly defined and achievable targets.

The background report for the Bear Smart Communities program,[5] which is basically a handbook for it, explains the requirements for Bear Smart Community status. Phase I, it says, is the Problem Analysis phase and has these seven components:

1. conduct preliminary bear hazard assessment
2. review bear-human education programs
3. design bear-human conflict monitoring system
4. review waste management system
5. review waste management bylaw
6. create a green space management strategy
7. review community planning strategy

Phase II focuses on the Bear-Human Conflict Management Plan and has these six components:

1. implement bear-human conflict monitoring system
2. implement education program
3. implement bear-proof waste management system
4. implement and enforce Bear Smart bylaws
5. revise the Official Community Plan and Regional Growth Strategy to be consistent with the Bear-Human Conflict Management Plan
6. implement green space management program

This report documents the current conditions and activities being undertaken in Port Alberni in relation to Phase I of the Bear Smart Community program.

[5] *Ibid.* Davis, et al. p. 16.

GOALS OF THE PORT ALBERNI BEAR HAZARD ASSESSMENT

A bear hazard assessment assesses bear habitat and bear-people complaints in a given geographic area, analyses the information, then proposes recommendations to enable communities to become "Bear Smart." The primary objectives of the Port Alberni Bear Hazard Assessment are to reduce the number of bear-people conflicts in the city and support the city's application for Bear Smart Community status. This report shows how Port Alberni can meet the criteria for Phase I of the program. It details activities and conditions within the city that contribute to the preventable causes of bear-human conflict and that indicate measures the city can adopt in order to reduce conflicts. The ultimate goals are to ensure the safety of people and protection of property, and to reduce the number of bears that are destroyed.

This report contains the following information:

1. Discussion of information relating to natural and non-natural attractants in and near the city, and that identifies the following:
   - general bear habitat suitability within and adjacent to the city, known movements of bears in the area (including travel corridors), and visibility and other sensory issues;
   - human-use areas that have high risk for conflict with bears, such as schools, playgrounds, residential areas located in or adjacent to bear habitat, parks and trails that pass through higher-quality bear habitats (e.g., creeks, berry patches), and residential, commercial, and industrial areas along the waterfront at the top of the Inlet (or the Somass estuary);
   - major features that may influence the travel patterns of bears, including riparian areas, roads, community edges, hydro or railway rights-of-way, and security cover/green space;
   - residential and commercial garbage management, including in parks and public places;
   - regional issues that may affect the success of a Port Alberni Bear Smart Community program, for example, the connectivity between the city and the forests and rural areas surrounding it.
2. A review of patterns of bear-human conflicts based on discussions with the district Conservation Officer, and on data from the Problem Wildlife Occurrence Reports recorded at the Call Centre for the Conservation Officer Service. This includes a discussion of:
   - sites, areas, and trails that are considered high risk for bear-human conflict,
   - practices that are considered high risk for bear-human conflict, and
   - potential data limitations

In their background report, Davis et al.[6] state that to understand how "problem bears" develop, we need to know the biological needs of bears, their behaviours, and how they learn. In other words, the public needs to learn more about bear ecology if it is to learn how to reduce the causes of bear-human conflict and, in the process, increase the degree of safety for themselves and their property, and for the bears themselves. Therefore, this report also contains a section on bear ecology and behaviours, and on the importance of bears to the health of coastal salmon-forest ecosystems.

This report will show how the city of Port Alberni can help its residents reduce the risks associated with living in "bear country," and at the same time preserve the natural environment in which the city is situated, and which is considered one of its major assets.

[6] *Ibid.* p. 4.

BEAR-HUMAN INTERACTION DEFINITIONS[7]

The following definitions apply to terms used to describe bear-human interactions:

Aggressive behaviour	Defensive: Defensive aggression is usually provoked and results in the bear swatting, charging, etc. when approached too closely. Offensive: Offensive aggression is usually initiated by the bear as attempted predation, tearing tents without food attractants, etc.[8]
Bear-human interaction	Any of the various activities and their effects involving bears and humans, including sightings, encounters, and incidents.
Displacement	Encounters where the bear is displaced and runs or walks away.
Encounter	When a bear is aware of human presence, regardless of whether or not the humans are aware of the bear; the bear may ignore people (because they are habituated to people), or they may approach people.
Food-conditioned	Bears that have been rewarded or positively reinforced with non-natural foods, such as human food or garbage, and as a result have learned to associate humans and/or human developments with the potential to obtain food. Bears that are both human-habituated (see below) and food-conditioned generally pose a serious threat to human safety. As a result, these bears are frequently killed (Herrero 1985, Ciarniello 1997).
Human-habituation	The reduction or absence of an avoidance or fear response that a bear can learn from neutral inter-actions with people and that are not threatening, painful, or injurious (to the bear). Bears can be human-habituated without being food-conditioned.
Incident or **conflict**	The most serious bear-human interaction. An interaction is considered an incident or conflict when any of the following occur: a) physical contact between a person and a bear b) damage to or loss of property or food c) high intensity charge by a bear toward people d) people have to take extreme evasive action in response to a bear e) people use a deterrent on a bear f) a bear is translocated or destroyed
Non-natural foods	Foods made available to bears by people and that are either not natural in a bear's diet or have been taken out of a natural/wild context and placed in a settled area (such as some tree or shrub species that people use for landscaping purposes, in a backyard garden, agricultural setting, etc.).
Observation	When a human sees a bear but the bear is unaware of the human.

[7] Most of these definitions come from the following publication: Wellwood, Debbie. 2001. *Hazard Assessment of Bear-Human Conflict in Stewart, British Columbia--Phase 1*, Raven Ecological Services, Smithers, BC; p. 7; others have been adapted from general research and information from Wayne McCrory, RPBio.

[8] BC Ministry of Environment. Dec 2002. Third Ed. *Bear-People Conflict Prevention Plan for Parks and Protected Areas in British Columbia*. Victoria, BC; pp. 73.

TOWN OF LADYSMITH

Quarterly Building Permit Summary - YTD JUNE 2017

	Commercial		Industrial		Institutional		Residential (NEW)		Residential Adds, Renos, Other		Dwelling Units	Total Permits	Bldg & Plbg Permit Fees This Month	Permit Values This Month	Permit Values Year to Date 2017
	No. of Permits	Values	No.of Permits	Values	No. of Permits	Values	No. of Permits (new res)	Values	No. of Permits	Values					
JUNE	0	-	0	-	0	-	7	$ 1,553,185	6	$ 66,700	11	13	$ 19,703	$ 1,619,885	$ 5,368,785

Year to Date

JAN	1	$70,000	0	-	0	-	1	$196,980	2	$53,800	1	4	$3,769	$320,780	$320,780
FEB	0	-	0	-	1	$12,500	1	$423,600	4	$37,502	5	6	$5,210	$473,602	$794,382
MAR	1	$6,000	0	-	0	-	1	$263,280	4	$125,390	3	6	$4,857	$394,670	$1,189,052
APR	0	-	0	-	0	-	4	$1,033,204	2	$2,000	6	6	$12,419	$1,035,204	$2,224,256
MAY	1	$8,000	0	-	0	-	4	$1,466,364	3	$50,280	12	8	$18,967	$1,524,644	$3,748,900
JUN	0	-	0	-	0	-	7	$1,553,185	6	$66,700	11	13	$19,703	$1,619,885	$5,368,785
JUL															
AUG															
SEP															
OCT															
NOV															
DEC															
TOTAL	3	$84,000	0	$0	1	$12,500	18	$4,936,613	21	$335,672	38	43	$64,925	$5,368,785	

Demos Mth	0	Demos YTD	0

Comparison	#DU	Value	#BP	Value
YTD 2017	38	$4,936,613	43	$5,368,785
YTD 2016	28	$4,270,005	45	$5,191,885
YTD 2015	26	$2,866,272	52	$3,328,217

NEW D.U.TYPE	SFD	SFD + Suite	Suite added to existing	Coach House	Multi-Family
THIS MONTH	5	1	0	0	4
YTD	10	4	3	1	16

Colin Bollinger, Senior Building Inspector

Felicity Adams, Director of Development Services

TOWN OF LADYSMITH

Quarterly Building Permit Summary - YTD JULY 2017

	Commercial		Industrial		Institutional		Residential (NEW)		Residential Adds, Renos, Other		Dwelling Units	Total Permits	Bldg & Plbg Permit Fees This Month	Permit Values This Month	Permit Values Year to Date 2017
	No. of Permits	Values	No.of Permits	Values	No. of Permits	Values	No. of Permits (new res)	Values	No. of Permits	Values					
JULY	2	$ 48,000	0	-	0	-	6	$ 1,571,401	3	$ 16,000	12	11	$ 19,837	$ 1,635,401	$ 7,004,186

Year to Date

JAN	1	$70,000	0	-	0	-	1	$196,980	2	$53,800	1	4	$3,769	$320,780	$320,780
FEB	0	-	0	-	1	$12,500	1	$423,600	4	$37,502	5	6	$5,210	$473,602	$794,382
MAR	1	$6,000	0	-	0	-	1	$263,280	4	$125,390	3	6	$4,857	$394,670	$1,189,052
APR	0	-	0	-	0	-	4	$1,033,204	2	$2,000	6	6	$12,419	$1,035,204	$2,224,256
MAY	1	$8,000	0	-	0	-	4	$1,466,364	3	$50,280	12	8	$18,967	$1,524,644	$3,748,900
JUN	0	-	0	-	0	-	7	$1,553,185	6	$66,700	11	13	$19,703	$1,619,885	$5,368,785
JUL	2	$48,000	0	-	0	-	6	$1,571,401	3	$16,000	12	11	$19,837	$1,635,401	$7,004,186
AUG															
SEP															
OCT															
NOV															
DEC															
TOTAL	5	$132,000	0	$0	1	$12,500	24	$6,508,014	24	$351,672	50	54	$84,762	$7,004,186	

Demos Mth	0	Demos YTD	0

Comparison	#DU	Value	#BP	Value
YTD 2017	50	$6,508,014	54	$7,004,186
YTD 2016	31	$4,964,585	50	$5,907,465
YTD 2015	33	$3,703,212	59	$4,239,533

NEW D.U.TYPE	SFD	SFD + Suite	Suite added to existing	Coach House	Multi-Family
THIS MONTH	2	3	0	0	4
YTD	12	7	3	1	20

R. D. K. FOR

Colin Bollinger, Senior Building Inspector

Felicity Adams, Director of Development Services

Ladysmith Fire /Rescue

P.O. Box 760 Ladysmith, B.C. V9G 1A5

Phone: 250-245-6436 · Fax: 250-245-0917

LADYSMITH

FIRE CHIEF'S REPORT

MONTH: April 2017

TYPE OF CALL OUT	J	F	M	A	M	J	J	A	S	O	N	D	YTD TOTALS
Alarms Activated: Pulled Station	1		1										2
By mistake		2											
Electrical problem	2	2	2	2									
Due to cooking				2									
Assistance	2	1	1										
Burning Complaint		2		1									
Fire: Structure	1	1	2	2									
Chimney		1											
Interface / Bush													
Vehicle		1											
Other													
Hazardous Materials		1											
Hydro Lines: Down / Fire		1											
Medical Aid	4	4	8	4									
MVI	1	1	4	5									
Rescue													
Mutual Aid provided by Ladysmith to outside areas	3	1											
MONTH TOTALS (exc.. Practises)	14	18	18	16									66
Practises (Totals for each Month)	5	4	4	4									
Mutual Aid requested by Ladysmith trom outside areas													

ALARMS ACTIVATED (Location/Owner)

1. 412 White Street - cooking
2. 650 Alderwood - cooking
3. 1110 1st Ave - Aggie Hall (problem with fire alarm system)
4. 1110 1st Ave - Aggie Hall (problem with fire alarm system)

COMPARISONS:

Year to Date 2017	66 (exc. practices)
Year to Date 2016	60 (exc. practices)
Year to Date 2015	45 (exc. practices)

APPROVED:

Fire Chief

Ladysmith Fire /Rescue

P.O. Box 760 Ladysmith, B.C. V9G 1A5

Phone: 250-245-6436 · Fax: 250-245-0917

LADYSMITH

FIRE CHIEF'S REPORT

MONTH: May 2017

TYPE OF CALL OUT	J	F	M	A	M	J	J	A	S	O	N	D	YTD TOTALS
Alarms Activated: Pulled Station	1		1		1								3
By mistake		2											
Electrical problem	2	2	2	2	1								
Due to cooking				2									
Assistance	2	1	1		1								
Burning Complaint		2		1									
Fire: Structure	1	1	2	2									
Chimney		1											
Interface / Bush													
Vehicle		1											
Other													
Hazardous Materials		1											
Hydro Lines: Down / Fire		1											
Medical Aid	4	4	8	4	1								
MVI	1	1	4	5	4								
Rescue													
Mutual Aid provided by Ladysmith to outside areas	3	1											
MONTH TOTALS (exc.. Practises)	14	18	18	16	8								74
Practises (Totals for each Month)	5	4	4	4	5								
Mutual Aid requested by Ladysmith trom outside areas													

ALARMS ACTIVATED (Location/Owner)

1. 710 6th Ave.(LSS) - electrical problem
2. 1127 - 4th (Lodge on 4th) - patient pulled pull station

COMPARISONS:

Year to Date 2017	74 (exc. practices)
Year to Date 2016	70 (exc. practices)
Year to Date 2015	62 (exc. practices)

APPROVED: Ray Delmont

Fire Chief

Ladysmith Fire /Rescue

P.O. Box 760 Ladysmith, B.C. V9G 1A5

Phone: 250-245-6436 · Fax: 250-245-0917

LADYSMITH

FIRE CHIEF'S REPORT

MONTH: June 2017

TYPE OF CALL OUT	J	F	M	A	M	J	J	A	S	O	N	D	YTD TOTALS
Alarms Activated: Pulled Station	1		1		1	3							6
By mistake		2											
Electrical problem	2	2	2	2	1	2							
Due to cooking				2		3							
Assistance	2	1	1		1								
Burning Complaint		2		1		1							
Fire: Structure	1	1	2	2		2							
Chimney		1											
Interface / Bush													
Vehicle		1											
Other						1							
Hazardous Materials		1											
Hydro Lines: Down / Fire		1											
Medical Aid	4	4	8	4	1	4							
MVI	1	1	4	5	4								
Rescue						1							
Mutual Aid provided by Ladysmith to outside areas	3	1				0							
MONTH TOTALS (exc.. Practises)	14	18	18	16	8	17							91
Practises (Totals for each Month)	5	4	4	4	5	4							
Mutual Aid requested by Ladysmith trom outside areas													

ALARMS ACTIVATED (Location/Owner)

1. 422 Esplanade - electrical problem
2. LMS Dock Visitors Centre - sensor problem
3. 515 Davis Road - Cooking
4. 515 Davis Road - Cooking
5. 1127 Fourth Ave (Lodge on 4th) - patient pulled pull station
6. 510 6th Ave (Ladysmith Primary) - student pulled pull station
7. 631 1st Ave (Rialto Apartments) - pull station pulled
8. 1128 First Ave - cooking on stove top

COMPARISONS:

Year to Date 2017	91 (exc. practices)
Year to Date 2016	88 (exc. practices)
Year to Date 2015	82 (exc. practices)

APPROVED: Ray Delcourt

Fire Chief

COASTAL ANIMAL CONTROL SERVICES OF BC LTD

2202 Herd Rd. Duncan, BC. V9L 6A6 (250) 748-3395

TOWN OF LADYSMITH POUND REPORT

June 2017

Disposition of Impounded Dogs	**Current Month**	**2017 Totals**
Stray dogs impounded	**1**	**8**
Stray dogs claimed	1	7
Stray dogs put up for adoption	0	1
Stray dogs pending	0	0
Stray dogs euthanized	0	0
Stray livestock / cats	0	0
Other	**0**	**0**
Calls Received and Investigated	**27**	**207**
Aggressive dogs	0	3
Dogs at large	1	10
Confined dog	0	7
Noise (barking) complaints	1	10
Other non specific dog related calls	2	10
Wildlife / livestock / cats	0	0
Patrols	23	167
After hour call outs	0	1
Pick Up fees	$00.00	$50.00
Impound fees	$100.00	$600.00
Daily board fees	$00.00	$80.00
Monthly Pound and Board Fees Collected	**$100.00**	**$730.00**

Tickets issued			**YTD**
Over 3 dog limit		4	4
Unlicenced dog		3	3
Restricted dog at large		0	0
Restricted dog not muzzled or leashed		0	0
Dangerous dog not securely confined		0	0
Habitually noisy		0	0
Failure to clean up after dog		0	0
Licencing Statistics	Tags	1	13
	Revenue	$54.00	$462.00

Judi Burnett
Coastal Animal Control Services of BC Ltd

CAS Summary of Service Calls

01-Jun-17 to 30-Jun-17

Total calls by type:	*20*
At large	1
Noisy	1
Other	2
Park Patrols	16

Issue	Call #	Received	Type	Completed
Ladysmith			**20 calls**	
At large			**1**	
	1829	04-Jun-17	Dog	12-Jun-17
Noisy			**1**	
	1847	26-Jun-17	Dog	27-Jun-17
Other			**2**	
	1848	27-Jun-17	Dog	
	1833	14-Jun-17	Dog	14-Jun-17
Park Patrols			**16**	
	1846	21-Jun-17		20-Jun-17
	1840	20-Jun-17	Dog	12-Jun-17
	1836	19-Jun-17	Dog	
	1834	19-Jun-17	Dog	19-Jun-17
	1835	16-Jun-17	Dog	16-Jun-17
	1832	14-Jun-17	Dog	14-Jun-17
	1845	12-Jun-17	Dog	12-Jun-17
	1844	08-Jun-17	Dog	08-Jun-17
	1839	08-Jun-17	Dog	08-Jun-17
	1843	07-Jun-17	Dog	07-Jun-17
	1838	07-Jun-17	Dog	07-Jun-17
	1842	05-Jun-17	Dog	05-Jun-17
	1837	04-Jun-17	Dog	04-Jun-17
	1841	04-Jun-17	Dog	04-Jun-17
	1831	01-Jun-17	Dog	01-Jun-17
	1830	01-Jun-17	Dog	01-Jun-17
Total:			**20 calls**	

CAS Summary of Park Patrols

from 01-Jun-2017 to 30-Jun-2017

				Total	36 dogs	7 warnings
Date	***Start***	***End***	***Staff***		***Dogs***	***Warnings***
Ladysmith					36 dogs	7 warnings
Transfer Beach					36 dogs	7 warnings
26-Jun-17	2:35	3:20	Geet		7	1
26-Jun-17	8:45	8:55	Geet		0	0
25-Jun-17	10:05	2:02	Geet		15	4
24-Jun-17	10:55	1:25	Geet		0	0
22-Jun-17	3:30	3:35	Geet		5	0
22-Jun-17	8:35	8:50	Geet		4	1
21-Jun-17	3:40	4:10	Geet		5	1

LS.

COASTAL ANIMAL CONTROL SERVICES OF BC LTD

2202 Herd Rd. Duncan, BC. V9L 6A6 (250) 748-3395

TOWN OF LADYSMITH POUND REPORT

May 2017

Disposition of Impounded Dogs	Current Month	2017 Totals
Stray dogs impounded	3	7
Stray dogs claimed	2	6
Stray dogs put up for adoption	1	1
Stray dogs pending	0	0
Stray dogs euthanized	0	0
Stray livestock / cats	0	0
Other	0	0
Calls Received and Investigated	**30**	**180**
Aggressive dogs	0	3
Dogs at large	2	9
Confined dog	4	7
Noise (barking) complaints	3	9
Other non specific dog related calls	1	8
Wildlife / livestock / cats	0	0
Patrols	20	144
After hour call outs	0	1
Pick Up fees	$00.00	$50.00
Impound fees	$200.00	$500.00
Daily board fees	$50.00	$80.00
Monthly Pound and Board Fees Collected	**$250.00**	**$630.00**

Tickets issued			YTD
Over 3 dog limit		0	0
Unlicenced dog		0	0
Restricted dog at large		0	0
Restricted dog not muzzled or leashed		0	0
Dangerous dog not securely confined		0	0
Habitually noisy		0	0
Failure to clean up after dog		0	0
Licencing Statistics	Tags	3	12
	Revenue	$106.00	$408.00

Judi Burnett
Coastal Animal Control Services of BC Ltd

CAS Summary of Service Calls

01-May-17 to 31-May-17

Total calls by type:	*30*
At large	2
Confined	4
Noisy	3
Other	1
Park Patrols	20

Issue	Call #	Received	Type	Completed
Ladysmith			**30 calls**	
At large			**2**	
	1812	16-May-17	Dog	24-May-17
	1793	02-May-17	Dog	08-May-17
Confined			**4**	
	1811	23-May-17	Dog	23-May-17
	1810	21-May-17	Dog	23-May-17
	1795	12-May-17	Dog	25-May-17
	1794	05-May-17	Dog	06-May-17
Noisy			**3**	
	1819	27-May-17	Dog	
	1809	19-May-17	Dog	
	1808	16-May-17	Dog	24-May-17
Other			**1**	
	1820	30-May-17	Dog	
Park Patrols			**20**	
	1817	24-May-17	Dog	24-May-17
	1818	24-May-17	Dog	24-May-17
	1816	22-May-17	Dog	22-May-17
	1815	22-May-17	Dog	22-May-17
	1814	21-May-17	Dog	21-May-17
	1813	21-May-17	Dog	21-May-17
	1807	15-May-17	Dog	15-May-17
	1806	14-May-17	Dog	14-May-17
	1805	14-May-17	Dog	14-May-17
	1804	11-May-17	Dog	11-May-17
	1803	10-May-17	Dog	10-May-17
	1802	08-May-17	Dog	08-May-17
	1801	08-May-17	Dog	08-May-17
	1800	07-May-17	Dog	07-May-17
	1799	07-May-17	Dog	07-May-17
	1798	03-May-17	Dog	03-May-17
	1797	03-May-17	Dog	03-May-17
	1796	03-May-17	Dog	03-May-17
	1791	01-May-17	Dog	01-May-17
	1792	01-May-17	Dog	01-May-17
Total:			**30 calls**	

LS Copy

COASTAL ANIMAL CONTROL SERVICES OF BC LTD

2202 Herd Rd. Duncan, BC. V9L 6A6 (250) 748-3395

TOWN OF LADYSMITH POUND REPORT
April 2017

Disposition of Impounded Dogs	**Current Month**	**2017 Totals**
Stray dogs impounded	**0**	**4**
Stray dogs claimed	0	4
Stray dogs put up for adoption	0	0
Stray dogs pending	0	0
Stray dogs euthanized	0	0
Stray livestock / cats	0	0
Other	**0**	**0**
Calls Received and Investigated	**42**	**150**
Aggressive dogs	2	3
Dogs at large	1	7
Confined dog	0	3
Noise (barking) complaints	2	6
Other non specific dog related calls	3	7
Wildlife / livestock / cats	0	0
Patrols	34	124
After hour call outs	0	1
Pick Up fees	$00.00	$50.00
Impound fees	$000.00	$300.00
Daily board fees	$00.00	$30.00
Monthly Pound and Board Fees Collected	**$00.00**	**$380.00**

Tickets issued			**YTD**
Over 3 dog limit		0	0
Unlicenced dog		0	0
Restricted dog at large		0	0
Restricted dog not muzzled or leashed		0	0
Dangerous dog not securely confined		0	0
Habitually noisy		0	0
Failure to clean up after dog		0	0
Licencing Statistics	Tags	0	9
	Revenue	$00.00	$302.00

Judi Burnett
Coastal Animal Control Services of BC Ltd

RECEIVED
JUL 11 2017
TOWN OF LADYSMITH

CAS Summary of Service Calls

01-Apr-17 to 30-Apr-17

Total calls by type:	*42*
Aggressive	2
At large	1
Noisy	2
Other	3
Park Patrols	34

Issue	Call #	Received	Type	Completed
Ladysmith			**42 calls**	
Aggressive			**2**	
	1770	13-Apr-17	Dog	13-Apr-17
	1752	04-Apr-17	Dog	20-Apr-17
At large			**1**	
	1753	05-Apr-17	Dog	20-Apr-17
Noisy			**2**	
	1779	21-Apr-17	Dog	25-Apr-17
	1763	11-Apr-17	Dog	
Other			**3**	
	1772	18-Apr-17	Dog	23-Apr-17
	1771	15-Apr-17	Dog	
	1764	11-Apr-17	Dog	11-Apr-17
Park Patrols			**34**	
	1790	30-Apr-17	Dog	30-Apr-17
	1789	30-Apr-17	Dog	30-Apr-17
	1787	27-Apr-17	Dog	27-Apr-17
	1788	27-Apr-17	Dog	27-Apr-17
	1785	26-Apr-17	Dog	26-Apr-17
	1786	26-Apr-17	Dog	27-Apr-17
	1783	25-Apr-17	Dog	25-Apr-17
	1782	25-Apr-17	Dog	25-Apr-17
	1781	23-Apr-17	Dog	23-Apr-17
	1780	23-Apr-17	Dog	23-Apr-17
	1778	19-Apr-17	Dog	19-Apr-17
	1777	19-Apr-17	Dog	19-Apr-17
	1775	18-Apr-17	Dog	18-Apr-17
	1776	18-Apr-17	Dog	18-Apr-17
	1773	13-Apr-17	Dog	13-Apr-17
	1774	13-Apr-17	Dog	13-Apr-17
	1769	12-Apr-17	Dog	12-Apr-17
	1768	12-Apr-17	Dog	12-Apr-17
	1766	11-Apr-17	Dog	11-Apr-17
	1765	11-Apr-17	Dog	11-Apr-17
	1767	11-Apr-17	Dog	11-Apr-17
	1762	10-Apr-17	Dog	10-Apr-17
	1761	10-Apr-17	Dog	10-Apr-17
	1760	09-Apr-17	Dog	09-Apr-17
	1759	09-Apr-17	Dog	09-Apr-17

Issue	Call #	Received	Type	Completed
	1758	06-Apr-17	Dog	06-Apr-17
	1757	05-Apr-17	Dog	05-Apr-17
	1756	05-Apr-17	Dog	05-Apr-17
	1754	04-Apr-17	Dog	04-Apr-17
	1755	04-Apr-17	Dog	04-Apr-17
	1751	03-Apr-17	Dog	03-Apr-17
	1750	03-Apr-17	Dog	03-Apr-17
	1748	02-Apr-17	Dog	02-Apr-17
	1749	02-Apr-17	Dog	02-Apr-17
Total:			**42 calls**	

Ladysmith 30 Years Festival of Lights

P. O. Box 98
Ladysmith, B.C.
V9G 1A1

Office: 250-245-5888
Fax: 250-245-0311

Email: ladysmithfol@shawbiz.ca

Web: www.ladysmithfol.com

May 11th, 2017

Town of Ladysmith
P.O. Box 220
Ladysmith, B.C. V9G 1A2

Dear Mayor Stone and Council

The members of the Festival of Lights are starting to get quite excited about the upcoming 30th Anniversary of our communities biggest event!!! Looking back over the years ... we don't think that Light Up would ever turn into what we have today. We are very proud of all the work all the volunteers have done, over the years, to not only help put Ladysmith on the map, but to also give the entire community something amazing to be proud of.

This year, so far, we have come up with quite a few plans to make this year, and future years, bigger and better and to give more memories to our thousands of visitors.

One project that we believe will be truly amazing is a new decoration that we would like to have built and positioned on top of the "Ladysmith Heritage by the Sea" sign at the north end of Bob Stuart Park. It is our goal to make this a permanent structure that will be a continuous reminder to all Island travellers that Ladysmith is the home to the famous Festival of Lights. We have attached a rough diagram to this letter which we hope will give members of council a better idea of what we see at that location.

The decoration would be animated with the perimeter lights being twinkle lights and the arch of multi-coloured snowflakes would also be animated. It would also include a digital sign under the arch that could advertise local events and special dates.

The FOL volunteers hope that this is something that Council and the Town also feels is worthwhile and we are looking for your support to move forward on. If given the okay the decoration will be built in Ladysmith and we will work closely with the Parks Dept as well as Public Works to ensure that everything is done properly and to make sure all is safe.

We wish to thank you very much for taking the time to read this request and we look forward to moving forward with the Town on this project and another amazing Light Up!!

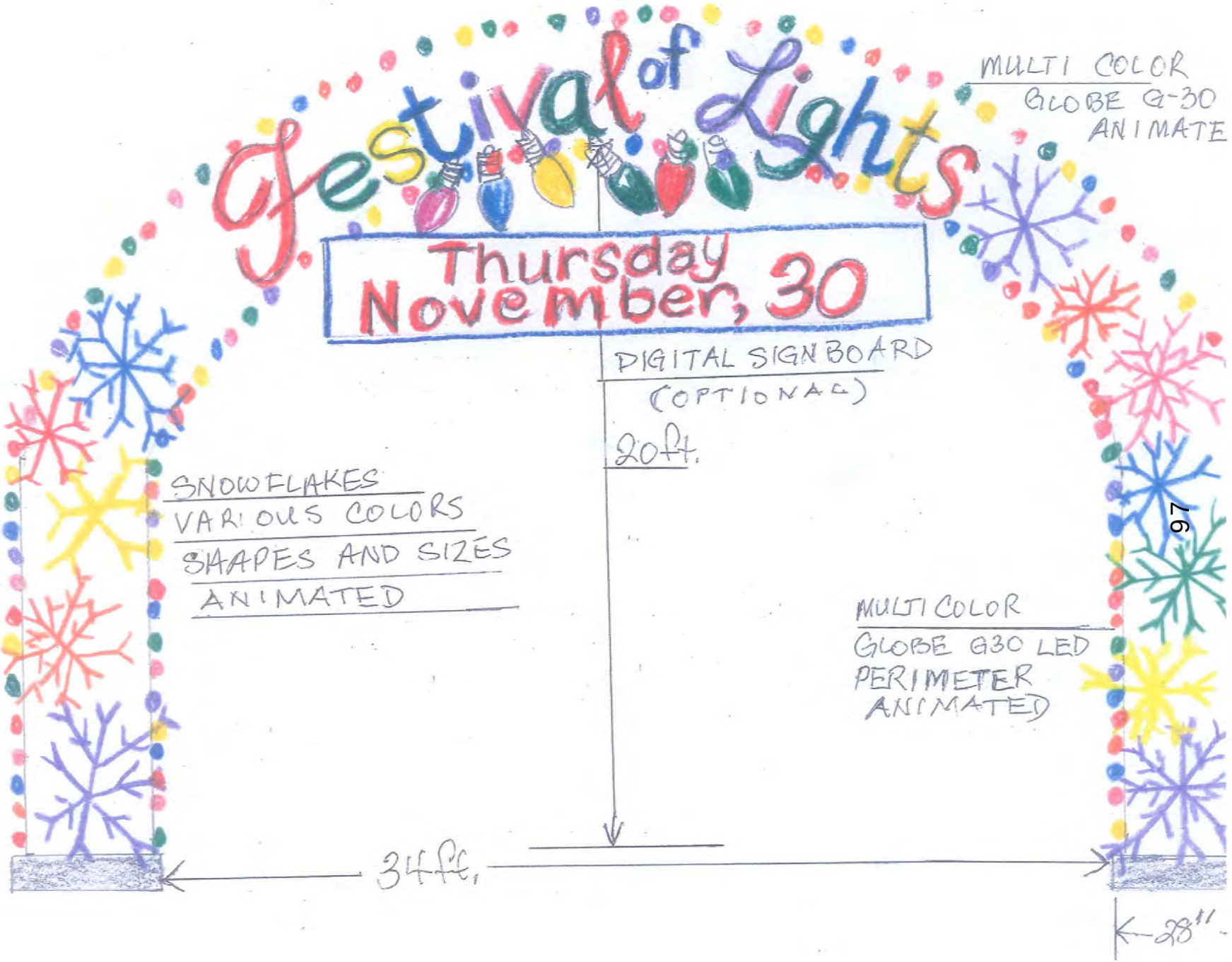
Sincerely

Duck Paterson

President

The Biggest "Turn On" on Vancouver Island.

We acknowledge the financial support of the Province of British Columbia.


Festival of Lights
Thursday
November, 30
MULTI COLOR
GLOBE G-30
ANIMATE
DIGITAL SIGNBOARD
(OPTIONAL)
20ft.
SNOWFLAKES
VARIOUS COLORS
SHAPES AND SIZES
ANIMATED
MULTI COLOR
GLOBE G30 LED
PERIMETER
ANIMATED
34ft.
28"

STAFF REPORT TO COUNCIL

From: Clayton Postings, Director, Parks, Recreation and Culture
Meeting Date: August 14, 2017
File No:

RE: Ladysmith Sport Facilities, BC Summer Games – Cowichan

RECOMMENDATION(S)

That the Committee recommend that Council:

1. Consider whether the Town would be able to commit to hosting the beach volleyball event at Transfer Beach for the 2018 BC Summer Games, and be responsible for the costs associated with the venue construction.; and
2. Should Council wish to commit to hosting the 2018 BC Summer Games beach volleyball events, direct staff to report back to Council with sources of funds to cover the associated costs and to amend the financial plan accordingly.

PURPOSE

Provide Council with information relating to Town of Ladysmith sport facilities to be used for the 2018 BC Summer Games.

PREVIOUS COUNCIL DIRECTION/RESOLUTIONS

June 19, 2017. That Council support in principle the proposal to add beach volleyball courts at Transfer Beach Park for the 2018 BC Summer Games (CS 2017-201)

INTRODUCTION/BACKGROUND

July 2018 the Cowichan region will be hosting the BC Summer Games. At this time the Town of Ladysmith has been confirmed as venue host for field lacrosse (Forrest Field) and co-host for baseball (Holland Creek) with Evans Park in North Cowichan.

The Cowichan Summer Games Board requested Council consider whether the Town would be able to host the beach volleyball tournament at Transfer Beach. At the June 19, 2017 Council meeting, Council directed Staff to investigate the feasibility and cost of hosting the event. A review of the Transfer Beach site has determined possible locations for the temporary courts (see attached site diagram). The proposed locations allow for the best court configuration, while also considering the least impact to the overall site, and being the most cost effective.

The courts could be installed two weeks prior to the event and removed following the event, which would limit any impact on other uses at the beach. The option which identifies three temporary courts being placed on the upper parking lot area, would also reduce the impact to any events or rentals of the Amphitheatre.

The cost estimates for adding three temporary courts and upgrading the current sand beach volleyball court are approximately $38,000.

Sand – 700 tons at $28 per	$19,600
Netting/Posts	$5,000
Ribbons/Boarders	$350
Anchors	$200
Labour/Equipment (install/remove – 3 staff 8 days	$8,000
Contingency	$5,000
TOTAL	$38,150

The costs associated with the sport venues are typically covered by the host community. At this point there have not been any funds made available through the BC Games Society or 2018 Cowichan Games Board for court construction.

Parks Staff have indicated that the posts and netting can be stored and used at a later date, as the Town currently does purchase netting for the existing court and uses posts on the trail system. The sand required by Volleyball BC is a specific type and does have limited use for other Town operations, resulting in the Town needing to either sell or donate the sand following the games.

Another option which could be considered would be to add a second court at the site of the existing half basketball court. This would allow for a second permanent court to be added to the Transfer Beach site. The benefit here would be the Town would have two upgraded permanent courts that would be legacies from the 2018 Summer Games. This would require relocation of the existing basketball court.. Suggestions received during the 2016 Parks, Recreation and Culture Master Plan did indicate that a full sized outdoor basketball court was desired. This could be accomplished by relocating the court. The associated costs would need to be determined by staff.

The Town is requested by the 2018 Cowichan Games Board to provide an answer relating to the volleyball facilities as soon as possible, as alternative options will need to be explored if the Transfer Beach option is not practical.

Staff have planned to recommend as part of the 2018 financial plan some improvements to Forrest Field and Holland Creek Ball Diamonds sites. These include sports facilities upgrades, parking, score clocks, and other accessory facilities to ensure the experience for visitors and participants during the games is excellent. The reason this is noted is that these proposed improvements were planned to be presented to Council during the 2018

budget discussions for consideration, and if approved allowing Staff enough time to complete prior to the games. There has also been expression of interest by the local sporting groups to participate in this site improvement plan, as the facilities will benefit from legacy improvements.

Another major event being held in Ladysmith in 2018 will be the World Cup of Soccer. Mid Isle Soccer is currently in the process of organizing this event.

SCOPE OF WORK

Town staff is currently working in partnership with the region's recreation departments and the 2018 BC Summer Games Board in developing the facilities to meet the requirements of the provincial sport organizations leading the events at the games.

Town Parks and Facilities Staff will implement any capital improvements that Council approves as part of the annual capital work plan. The objective would be to complete work relating to Games by April 30th, so there may be a requirement for early budget approval for identified projects

ALTERNATIVES

- Council advise the 2018 Cowichan Summer Games Board that the Town is willing to fund the construction of two beach volleyball courts at Transfer Beach, utilizing the one existing court and adding one temporary court into the Amphitheatre area.

- Council advise the 2018 Cowichan Summer Games Board that the Town is unable to fund the costs associated with adding the volleyball courts, but would support the use of the site for the tournament if funds were to become available.

FINANCIAL IMPLICATIONS

Cost estimates for the addition of four competition ready sand beach volleyball courts at Transfer Beach are estimated at $38,000.

Other site improvements for Forrest Field and Holland Creek relating to Summer Games are estimated between $10,000 to 15,000 for each site.

Gas tax funding could be used for the site improvements at Forrest Field and Holland Creek as these would be permanent facility improvements.

LEGAL IMPLICATIONS

None Identified

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

Improved sports facilities would benefit both existing sport organization usage along with possible future regional and provincial uses.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

Parks and Recreation would be the lead on these projects.

RESOURCE IMPLICATIONS

There is no major impact on existing resources.

ALIGNMENT WITH SUSTAINABILITY VISIONING REPORT

This initiative aligns with Strategy 7 – A Healthy Community: Continuing to enhance the quality of the public realm; increasing community facilities including health and medical facilities

ALIGNMENT WITH STRATEGIC PRIORITIES

No alignment identified.

SUMMARY

The Town has been identified as the host for the field lacrosse and baseball events for the 2018 BC Summer Games. The Town has also been requested to consider being the host for the beach volleyball at Transfer Beach. Council has been requested by the 2018 Cowichan Summer Games Board to provide a response on whether the Town is able to host the volleyball events and would be responsible for covering the costs associated with construction of the venue.

August 10, 2017

Clayton Postings, Director Parks, Recreation and Culture

I concur with the recommendation.

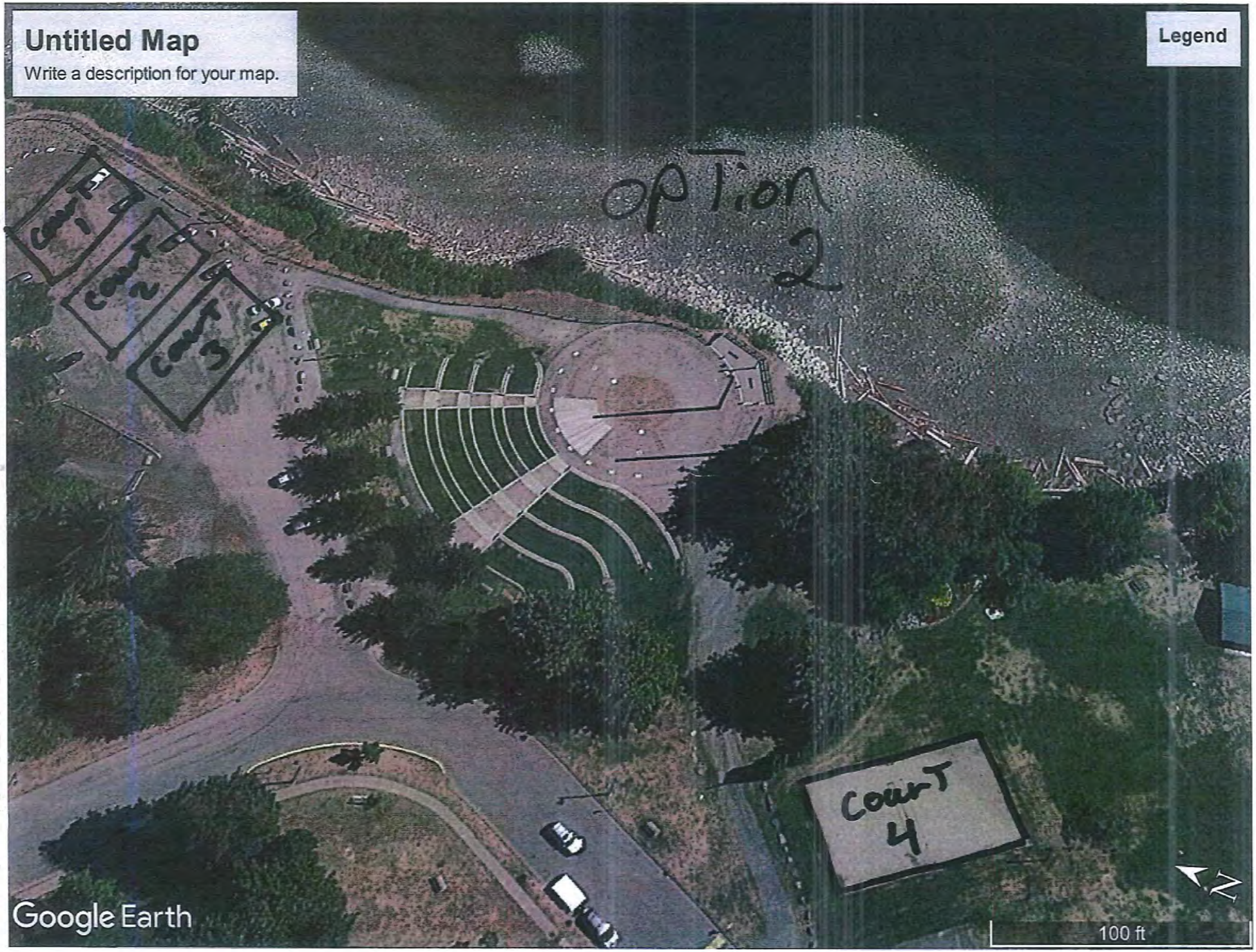
Per

Guillermo Ferrero, City Manager

ATTACHMENT(S)

Beach Volleyball court requirements
Proposed location of beach volleyball courts
2018 BC Summer Games – Cowichan venue listing


Untitled Map
Write a description for your map.
Legend
Option 1
Court 1
Court 2
Court 4
Court 3
N
100 ft
Google Earth


Untitled Map
Write a description for your map.
Legend
OPTION 2
COURT 1
COURT 2
COURT 3
COURT 4
Google Earth
100 ft
N

HOW TO BUILD A BEACH COURT

By Ed Drakich

The following guidelines will assist you in the proper construction of a Beach Volleyball Court (indoor or outdoor). Proper construction will ensure ideal playing conditions, superior longevity and low maintenance requirements.

BEACH VOLLEYBALL COURTS

The basic requirements necessary for building a court include:

- While the actual court size is 8m X 16m (doubles) and 9m X 18m (triples, fours and sixes), an area at least 14m x 24m should be excavated to a sand depth of between 30cm and 40cm (more if a gravel layer and/or drainage pipes are needed under the sand to assist in drainage)
- Permeable sand/soil or sand/gravel liner (filter cloth)
- 160,000 kg (160 tons) to 200,000 kg (200 tons) of sand are required per court
- Net system complete with standards, net, and boundary lines/tape (adjustable for different court boundaries)

COURT CONSTRUCTION

It is best to select a site that allows the court(s) to have a North/South orientation in order to reduce glare from the sun (The sun rises in the east and sets in the west). Another important consideration is the area around the periphery of the court, which should be free of large rooted and/or overhanging trees. There should be a clearance height of at least 7m above the playing surface.

A. Drainage:

Drainage of the court under the sand must be considered and can be accomplished by both grading the earth properly and installing a surface below the sand to promote drainage. The court should be excavated an additional 30cm (Below the sand depth of 30cm to 40cm) to allow for the installation of drainage pipe on the standard slant (14 degrees). The drainage point should lead away from the court at the lowest point; be

aware of the natural surrounding slope so that you do not trap water with your inclined viewing sides.

Depending on the soil quality of the subsurface you might need to place layer of gravel over the drainage pipes to enhance drainage. A good idea is to place a semi-permeable cover, such as a plastic landscaping mesh or some other artificial small-hole mesh, over the gravel to prevent the sand from washing through.*

NOTE: *If you have soil with good drainage and no rocks you could get away without the drainage system but we would still recommend using the semi-permeable sand/soil liner.*

B. Sand

Sand selection is probably the most important factor in court construction and any sand that is used should incorporate these specifications:

- **Washed** - The sand should be double washed, and free of silt and clay in order to prevent compaction
- **Particle Size** - The size of the sand particles should be between .5 and 1 mm to allow for proper drainage and maximum safety.
- **Particle Shape** - A sub angular shape will resist compaction and assist in drainage.
- **Colour** - Tan colored sand absorbs less heat with minimal glare.
- **Source** - A granite based sand (non-calcareous - no calcium or limestone) sand remains stable under all weather conditions and is unaffected by acid rain.

The sand boundary should be a minimum of 14m X 24m, thus allowing for a sand perimeter around the actual court. For high level competitions (VC or FIVB) the outer court dimensions should be 18m X 26m. The general guideline is that the area should be clear of any obstructions for 3m to 4m on all sides of the court. You should be careful to pad any item that would seem to be a hazard. There should also be a beam or boundary around the perimeter of the court to act as a container for the sand, which should be soft and contoured in order to eliminate possible injuries.

NET SYSTEMS

A. Poles

Poles for permanent standards can be either wood or pipe. The minimum suggested metal pole thickness is 4" to 5" (10cm to 12.5cm) in diameter, galvanized and thick walled steel pipe, while 6" (15cm) diameter pressure treated wood poles (Or 6" x 6" square pressure treated wood) are also acceptable. Poles should always be padded to prevent injury. Standards should be 4m long, with 3m above the court's sand surface and an additional 1m imbedded into the ground using a **concrete footing**. These should be placed 10.0m to 10.5m apart; any less and there will not be room for the full net (which is 9.5m wide) and adjusting cables. Permanent net systems should be free-standing (not use any support wires/straps). Portable net systems (usually with support straps) are also very popular and can be purchased at most volleyball specialty shops and sporting good stores.

B. Boundary Lines:

Boundary lines are made of 1/4" rope or 2" (5cm) ribbon and tied to the four corners with buried anchors. A bungee court should be attached to each corner and connected to a buried wood or plastic anchor disk (without sharp edges). The bungee will provide the tension necessary to keep the boundaries in place while giving the flexibility to reduce to chance of injury should a player catch their foot under the line.

C. Net Heights:

Net heights are 2.43 m for men's and co-ed play, and 2.24 m for women's and reverse co-ed. A 9.5m net with a cable top is preferred, but strong ropes can also be used. A winch (padded) and hardware, such as eyebolts/hooks, can be used to mount the top of the net. The bottom need only be anchored by rope to either the standard or eyebolts/hooks.

BC GAMES COWICHAN 2018 SUMMER

Cowichan 2018 BC Summer Games
Sport Package

AGES	GENDER	SPORT	ATHLETES	COACHES	OFFICIALS	TOTAL	VENUE (Community)
14-15	M & F	Athletics	288	32	37	357	Cowichan Sportsplex (Duncan)
13-50	M & F	Athletics-Special Olympics	16	4	2	22	Cowichan Sportsplex (Duncan)
15U	M	Baseball	128	24	22	174	Evans Park (Duncan)/Holland Creek Ball Park (Ladysmith)
U14	M	Basketball-U14 (5on5) Boys	80	16	11	107	Cowichan Secondary/Quamichan Middle (Duncan)
U14	F	Basketball-U14 (5on5) Girls	80	16	11	107	Cowichan Secondary/Quamichan Middle (Duncan)
U13	M	Basketball-U13 (3X3) Boys	80	16	8	104	Queen Margaret's School/Mount Prevost (Duncan)
U13	F	Basketball-U13 (3X3) Girls	80	16	8	104	Queen Margaret's School/Mount Prevost (Duncan)
12-16	M & F	Canoe/Kayak	88	16	19	123	Lakeview Park-Lake Cowichan/Cowichan River [Slalom] (Lake Cowichan)
U19	M & F	Canoe/Kayak-Para	16	8	0	24	Lakeview Park-Lake Cowichan/Cowichan River [Slalom] (Lake Cowichan)
11-18	M & F	Equestrian	48	16	16	80	Cowichan Exhibition Park (Duncan)
13-30	M & F	Equestrian-Para	10	9	3	22	Cowichan Exhibition Park (Duncan)
12-16	M & F	Golf	64	16	15	95	Cowichan Golf and Country Club (Duncan)
15-16	M	Lacrosse-Box	152	24	14	190	Fuller Lake Arena (Chemainus)/Kerry Park Arena (Mill Bay)
14-15	M	Lacrosse-Field	152	24	14	190	Forrest Field (Ladysmith)
Under 17	M & F	Rowing	56	16	12	84	Quamichan Lake (Art Mann Park) (Duncan)
Under 17	F	Rugby-Girls	96	24	8	128	Shawnigan Lake School (Competition Fields 1 & 2) (Shawnigan Lake)
U15; U19	M & F	Sailing	74	16	7	97	Maple Bay Yacht Club (Duncan)
Under 15	M	Soccer-Boys	144	24	16	184	Sherman Road Park/McAdam Park (Duncan)
Under 15	F	Soccer-Girls	144	24	16	184	Sherman Road Park/McAdam Park (Duncan)
U16	M	Softball-Boys	128	32	12	172	Evans Park/Cowichan Sportsplex (Duncan)
U16	F	Softball-Girls	128	32	12	172	Evans Park/Cowichan Sportsplex (Duncan)
Under 15	M & F	Swimming	160	16	30	206	Cowichan Aquatic Centre (Duncan)
12-30	M & F	Swimming-Para	8	4	1	13	Cowichan Aquatic Centre (Duncan)
Over 13	M & F	Swimming-Special Olympics	24	6	1	31	Cowichan Aquatic Centre (Duncan)
11-15	M & F	Synchronized Swimming	56	16	17	89	Nanaimo Aquatic Centre (Nanaimo)
10-17	M & F	Towed Water Sports	64	16	20	100	Shawnigan Lake (Shawnigan Lake)
14-15	M & F	Triathlon	52	16	8	76	Brentwood College School (Mill Bay)
18U	M & F	Volleyball-Beach	32	16	6	54	TBD
15U	M	Volleyball Indoor-Boys	112	16	6	134	Frances Kelsey Secondary/George Bonner Middle (Mill Bay)
15U	F	Volleyball Indoor-Girls	112	16	6	134	Frances Kelsey Secondary/George Bonner Middle (Mill Bay)
14-17	M & F	Wrestling	136	16	14	166	Chemainus Secondary (Chemainus)
		TOTALS	**2808**	**543**	**372**	**3723**	

18 Sports
Last Updated: July 28, 2017

Venues in red are not yet confirmed

Corporate and Funding Partners

Date Printed: 07/28/2017

STAFF REPORT TO COMMITTEE

From: Erin Anderson, Director of Financial Services
Meeting Date: August 14, 2017
File No:

RE: Amended Purchasing Policy and Example of RFP

RECOMMENDATION(S)

That the Committee recommend that Council approves the amended purchasing policy which includes a provision for Social Procurement.

PURPOSE

The purpose of this report is to confirm the purchasing policy as discussed at previous Committee meetings and provide an example of how the proposed purchasing policy amendment would be incorporated into a Town of Ladysmith Request for Proposal.

PREVIOUS COUNCIL/COMMITTEE DIRECTION/RESOLUTIONS

Resolution	Meeting Date	Resolution Details
CS 2016-245	Jul-04-2016	That Council: 1. Direct staff to incorporate Social Impact language into the Town's Purchasing Policy for consideration at an upcoming meeting of the Committee.
MS 2017-050	Jul-10-2017	The Committee discussed options for a social procurement policy for the Town th would provide measurable and tangible criteria to determine community benefit analyzing bids, tenders and proposals for goods and services That the Committee direct staff to finalize the following proposed list of community benefits to include in a social procurement policy and bring it back for further consideration: Economy • Demonstrate job creation within the local area, which is defined as the Cowichan Valley Regional District and the Regional District of Nanaimo. • Contribute to a stronger local economy (buy local) • Increase training and apprenticeship opportunities • Provide work experience and employment opportunities for youth aged 15 to 24 • Ensure that a Living Wage for the local area is paid Public Spaces

Resolution	Meeting Date	Resolution Details
		• Enhance community recreation, arts and/or culture infrastructure • Improve and enhance public spaces • Improve access to public spaces for people living with disabilities Environment • Demonstrate that work undertaken exceeds requirements for environmental standards

INTRODUCTION/BACKGROUND

The Committee has directed staff to incorporate Social Procurement into the Purchasing Policy. The specific community benefit focus is on the Economy, Public Spaces and the Environment.

DISCUSSION

The Town's Purchasing Policy was amended (see Appendix A – Draft Purchasing Policy). A sample of a proposed RFP is included in Appendix B.

SCOPE OF WORK

If approved, the Committee will recommend the policy to Council for consideration. Once adopted, a communications plan will be developed to notify current and potential suppliers of the change. Relevant staff will also be updated regarding any changes.

ALTERNATIVES

Council could choose not to incorporate Social procurement language into the Purchasing Policy. Council could also hire a consultant to lead the Social procurement process, although it should be noted that no funds have been allocated in the 2017-2021 Financial Plan for such a consultant.

FINANCIAL IMPLICATIONS

Overall, there should be minimal financial impact. Purchasing decisions are still made based on best overall value for the Town; this does not necessarily mean the lowest dollar value is selected.

LEGAL IMPLICATIONS

There are many legal aspects to procurement. Provincial and Federal trade agreements take priority over municipal policies.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

Information will be included in bid documents and posted on the Town's website.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

Finance is leading this project, although purchasing decisions have been delegated by Council through the Finance Department to the heads of other departments.

RESOURCE IMPLICATIONS

Additional time will be required to prepare bid documents as well as evaluating submissions to ensure that the desired outcomes are met.

ALIGNMENT WITH SUSTAINABILITY VISIONING REPORT

This aligns with Local, Diverse Economy.

ALIGNMENT WITH STRATEGIC PRIORITIES

This supports the Strategic Priority – Partnerships.

SUMMARY

Council has directed staff to include social procurement language into the Purchasing Policy. The Committee has selected Economy, Public Spaces and Environment as the focus for the Community Benefit goals to be leveraged through procurement.

Erin Anderson, Director of Financial Services

8 AUG 2017
Date Signed

I concur with the recommendation.

Per

Guillermo Ferrero, City Manager

ATTACHMENT(S)

Draft Policy
Example of RFP

TOWN OF LADYSMITH
POLICIES AND PROCEDURE MANUAL

TOPIC:	PURCHASING POLICY
APPROVED BY:	Council DATE: ~~April 8, 2013~~
RESOLUTION #:	CS-2013-118
(Amended from)	March 5, 2001 March 26/01 & Oct. 30, 2001, Jan 2002 January 2007 *(replaces Jan 2007 version in its entirety)*

POLICY STATEMENT

Effective procurement is a critical support function for the Town of Ladysmith to responsibly manage the public funds placed in their trust. The procurement system must be responsive, cost effective, socially responsible and as open as possible to public scrutiny.

GUIDING PRINCIPLES

The Town's Procurement Policy is guided by the following principles which set the standard for performance:

1. Procure the goods and services requirements of all departments in an efficient, timely and cost effective manner while maintaining the necessary controls;

2. Engage in an open bidding process wherever practical;

3. Ensure maximum value is obtained during the acquisition of goods and services. The concept of maximum value includes the value derived from social impacts (See Appendix B for desired Community Benefit Goals). Where applicable, the total cost of the goods and services purchased should be taken into account. Total cost may include but not be limited to acquisition cost, disposal cost, residual value, training cost, maintenance cost, product performance, social impact and environmental impact;

4. Take into account wherever practical the commitment to social responsibility, protection of the environment, and energy conservation;

5. Ensure the acquisition of goods and services meets the requirements of applicable legislation and trade agreements, including the New West Partnership Trade Agreement, and the Agreement on Internal Trade; and

6. Ensure that maximum value is realized when disposing of surplus goods, materials and equipment.

In addition to the principles outlined above, Town employees will demonstrate ethical purchasing behavior including:

1. Declaration of Interest - An employee who has a direct or indirect pecuniary interest with a supplier must disclose this relationship to his or her superior, and will be excluded from the quote or tender process;

2. Confidentiality and Accuracy of Information - The confidentiality of information received in the course of duty must be respected and should not be used for personal gain; information given in the course of duty should be true and fair and not designed to mislead;

3. Competition -While considering the advantages of the Town of Ladysmith maintaining a continuing relationship with a supplier, any arrangement which might prevent the effective operation of fair competition

should be avoided;

4. Business Gifts and Hospitality - To preserve the image and integrity of the employee, the employer and the profession, business gifts other than items of small intrinsic value should not be accepted. Reasonable hospitality is an accepted courtesy of a business relationship. The frequency and nature of gifts or hospitality accepted should not be such that the recipient might be or might reasonably be perceived by others to have been influenced in making a business decision as a consequence of accepting such hospitality or gifts. All gifts should be reported to the City Manager; and,

5. Discrimination and Harassment - No employee shall knowingly participate in acts of discrimination or harassment towards any person that he or she has business relations with.

PROCUREMENT PROCESS:

OVERVIEW

Procurement is the process by which a government acquires goods, services and capital works for its own use. This policy is designed to assist Town staff in meeting the Town's procurement objectives and to protect the Town and its staff against potential litigation and perceived or actual conflicts of interest. The essential elements of the Town's Procurement Policy are outlined below.

AUTHORITY

All staff members undertaking procurement actions must have formal authorization to do so. As outlined in section 149 of the Community Charter, the responsibility for the financial administration of the Municipality resides with the Chief Financial Officer (CFO). These duties include:

a. receiving all money paid to the municipality;

b. ensuring the keeping of all funds and securities of the municipality;

c. investing municipal funds, until required, in authorized investments;

d. expending municipal money in the manner authorized by the council;

e. ensuring that accurate records and full accounts of the financial affairs of the municipality are prepared, maintained and kept safe; and

f. exercising control and supervision over all other financial affairs of the municipality.

Authorization for expenditures is set out in the *Community Charter* Part 6, Division 3, s.173:

(1) A municipality must not make an expenditure other than one authorized under subsection (2) or (3).

(2) A municipality may make an expenditure that is included for that year in its financial plan, so long as the expenditure is not expressly prohibited under this or another Act.

(3) A municipality may make an expenditure for an emergency that was not contemplated for that year in its financial plan, so long as the expenditure is not expressly prohibited under this or another Act.

(4) The following apply in relation to the authority under subsection (3):

(a) the council must establish procedures to

(i) authorize expenditures under that subsection, and

(ii) provide for such expenditures to be reported to the council at a regular meeting;

(b) if an expenditure is made under that subsection, as soon as practicable, the council must amend the financial plan to include the expenditure and the funding source for the expenditure;

(c) the authority under that subsection does not include the authority to borrow for the purpose of making the expenditure.

Through this Policy, the CFO authorizes staff to perform and oversee the established processes of the Procurement Policy.

PROCESS:

COMPETITIVE BIDDING

The Town will utilize a competitive bidding process to secure goods and services wherever practical to obtain maximum value for its purchasing dollars.

The level of competition required for Town purposes is based on the dollar value and nature of the purchase ensuring the cost associated with administering a competitive process is proportionate to the benefit received as a result of the competition.

Purchases valued at less than $3,000 may use the informal methods of verbal or written quotations.

Purchases valued between $3,000 and $25,000 must have a minimum of three (3) written quotations.

Purchases of goods and services with a value over $25,000 must utilize a competitive process, which may be either a Request for Quotations, Request for Proposals, or Request for Tenders. These opportunities are given public notification by way of the internet, advertised on the Town website and on provincial government BC Bid website.

Under certain circumstances, at the discretion of the Director of Finance together with the City Manager, select bidding may be utilized. Select bidding may be utilized for goods and service if delivery or project deadlines dictate that time is of the essence, or where extraordinary circumstances or market conditions exist. Bid documents would be sent to a minimum of three known suppliers of the required goods or services thereby ensuring a competitive bid process.

The use of select bidding for projects valued at over $50,000 will require the further approval of the Council.

SOLE SOURCING

The requirement for a competitive process may be waived, if negotiating with a single supplier would offer better

value. Examples of sole source items includes:

- technological advancement;
- standardization;
- compatibility with another item;
- clearly superior product;
- expertise in a specific area or field that cannot be matched by others;
- warranty requirements.

Negotiations for such items will only be permitted:

- in extraordinary circumstances or market conditions;
- If there is only one supplier for the product or service;
- Emergency situations.

All sole source purchases over $50,000 require approval of the Council, following a Staff Report to Council from the originating department.

CO-OPERATIVE PURCHASING

Wherever possible, the Town will participate in cooperative purchasing to afford the taxpayers the benefits of both large volume purchases of common municipal requirements and the administrative efficiency in cooperative acquisition ventures.

DISPOSAL OF TOWN ASSETS

Disposal of obsolete or surplus goods, materials and equipment which are not used as trade-ins and RCMP recovered goods shall be through public auction or by way of publicly solicited offers.

Generally, Town employees, through public auction or sealed public bids may purchase Town assets or RCMP recovered goods. Those employees not eligible to purchase surplus assets shall be those employees responsible for declaring those assets surplus to the Town's needs or requirements.

The CFO shall make all final decisions with regard to the disposal of assets.

PURCHASING CARDS

Purchasing Cards are designed to provide a convenient and less burdensome method of procuring and paying for low value goods and services. The cards simplify the procurement process, reduce paperwork, speed up vendor payments and empower department heads and administrators to quickly and easily acquire the goods and services they need to manage their business units. The use of purchasing cards requires compliance with this policy.

The Purchasing Card is designed to replace a variety of payment processes including petty cash and low-value cheque requisitions.

PROHIBITIONS/ RESTRICTIONS

In order to ensure adherence to Purchasing policies, certain activities are prohibited:

- Procurement of goods or services prior to authorization,
- Procurement of goods and services by non-authorized staff, other than the use of purchasing cards, unless so permitted under the Purchasing Policy.
- The division of a single purchase into multiple increments to circumvent policies or levels of authority.
- Purchases of goods or services from any member of Council, appointed officers, employees of the Town or from any other source that would result in a conflict of interest situation.
- The purchase of any surplus goods, materials, or equipment by an employee of the Town responsible for declaring the goods, materials, or equipment surplus to the Town's needs.
- Procurement of land is not covered by this purchasing policy.

DOCUMENTATION

All steps in the procurement process will be documented in writing. The Town is subject to Freedom of Information and Protection of Privacy legislation, therefore purchasing decisions will be subject to public scrutiny from time to time. It is critical that we not only follow our policy but are able to demonstrate compliance.

ROLES AND RESPONSIBILITIES

The Finance Department, under the direction of the CFO, is committed to build a robust purchasing system that enables the user department to implement its purchase plan.

Department Heads are responsible for ensuring the Purchasing Policy is followed within their areas of control. In addition, the user department is the expert in the goods and services it plans to purchase. As such, its role is also to establish and implement its purchasing budget (through the annual operating and capital budget plan), receive and evaluate supplied goods and service, and provide feedback on the purchasing policy.

Council is responsible for ensuring that the principles of this Policy are operationalized. Annually Council will review and approve the 5 Year Financial Plan and the purchasing requirements of the Town, as required by the *Community Charter*.

RECOMMENDED METHODS OF PURCHASE

The nature of a purchase, as well as its dollar value, determines the procurement process and tools available. Appendix "A" attached hereto defines the authority of staff to approve the various purchasing thresholds, and outlines the recommended methods of purchase. Nothing in this policy restricts the discretion of responsible staff to require a written contract with a supplier whenever circumstances warrant.

Except where select bidding or sole sourcing is utilized in accordance with this Policy, purchases will be made using the following methods:

- Informal Quotes - for low dollar value or commodity type items employees will typically get quotes from multiple sources.
- Formal Quotes - where higher dollar value or non-routine items are required, employees will endeavor to get written quotes from a minimum of three suppliers
- Request for Quote (RFQ) - where the items required are over $25,000 and are for specific known or identifiable products. A formal quote process including: providing a description of the products or services required, advertising of the opportunity, managing the responses, providing consolidation of the results, review and recommendation by the initiating department for award and the issuance of the PO is required.
- Request for Proposal (RFP) - where the items required are over $25,000, and the Town requires the vendor to propose how to complete a product or service. A formal Proposal process including: providing an overview of the products or services required, advertising of the opportunity, managing the responses, providing consolidation of the results, establishing the evaluation criteria, review and recommendation by the initiating department for award, completing the contract and the issuance of the PO is required.
- Request for Tender (RFT) - where the items required are over $25,000, and the Town requires the vendor to complete a product or service where the project specifications and result are known. A formal tendering process including: providing an overview of the products or services required, advertising of the opportunity, managing the responses, providing consolidation of the results, review and recommendation by the initiating department for award, completing the contract and the issuance of the PO is required.

Appendix A

Acquisition:	0-2,999	$3,000 - 9,999	$10,000 - 24,999	$25,000- 250,000	$250,000+
Authority	Approved Staff	Manager	DH	DH + CM & DOF	DH CM & DOF/ Council
Documents	Informal	Formal	Formal	RFP, RFQ, RFT	RFP, RFQ, RFT
Process	Discretionary	Competitive Bidding	Competitive Bidding	Competitive Bidding	Competitive Bidding
Commitment Documentation	direct coding & signature	PO	PO	PO	PO

RFP = Request for Proposal
RFQ = Request for Quotation
RFT = Request for Tender
PO = Purchase Order
DH = Department Head
DOF = Director of Finance
CM = City Manager

Appendix B – Community Benefit Goals (up to 5% of total points)

Economy

- Demonstrate job creation within the local area, which is defined as the Cowichan Valley Regional District and the Regional District of Nanaimo.
- Contribute to a stronger local economy (buy local)
- Increase training and apprenticeship opportunities
- Provide work experience and employment opportunities for youth aged 15 to 24
- Ensure that a Living Wage for the local area is paid

Public Spaces

- Enhance community recreation, arts and/or culture infrastructure
- Improve and enhance public spaces
- Improve access to public spaces for people living with disabilities

Environment

- Demonstrate that work undertaken exceeds requirements for environmental standards

LADYSMITH

Town of Ladysmith

FINANCE DEPARTMENT

Request for Proposals

No. 2017-FIN-01

CORPORATE BANKING SERVICES

For further information
please contact:

Erin Anderson, BA, CPA, CMA
Director of Financial Services
Phone: 250-245-6402
E-mail: eanderson@ladysmith.ca

RFP Issue Date:
RFP Closing Date:
Location of Bid Opening: Ladysmith City Hall

2015 CANADA'S GREENEST EMPLOYERS

1. Introduction

Pursuant to Council's Purchasing Guidelines Policy under Council Resolution #TBA, the Town of Ladysmith is seeking proposals for the provision of Corporate Banking Services for our organization. We invite your firm to complete and submit a formal proposal for the Town's Corporate Banking Services.

The purpose and intent of this process is to obtain high quality banking services at a competitive price and in a timely, efficient manner.

Background

The Town of Ladysmith serves a population of 7,921 (Statistics Canada, 2011). Our annual capital and operating budget for 2017 is in excess of $35 million dollars. The Town employs approximately 75 people.

Currently, the banking service is split between the Ladysmith and District Credit Union and the Royal Bank of Canada. Through this RFP, the Town is seeking either a lead or shared-services financial institution.

The 2016 Annual Financial Statements can be found on the Town's website at www.ladysmith.ca .

This RFP excludes the following Banking Services:

- Purchasing Cards: The Town currently uses US Bank (CIBC) Purchasing Cards.
- Point of Sale: The Town currently uses Moneris for all Point of Sale transactions.
- Investment Services.

The Town maintains the following bank accounts:

- At RBC: General
- At LDCU: General, $US, Cemetery Care, Parks & Recreation, Restricted Reserves, Reserves, Development Cost Charges, and 3 other accounts are required by agreements.

Cash, Cheques, Debit Cards, Credit Cards:

- Cash, Cheques, and Debit Cards can be accepted at City Hall, 410 Esplanade
- Cash, Cheques, Debit Cards, and Credit Cards can be accepted at Frank Jameson Community Centre (FJCC), 810 6th Avenue
- Debit Cards can be accepted at Public Works, 330 6th Avenue

Activity Levels:

a) $15.3 million– Total annual property tax (2017).
b) In 2016, $5.3m of funds were received through online customer payments.
c) In 2016, $27million in cheques written.

2.0 Required Project Deliverables:

2.1 The Town of Ladysmith is soliciting proposals from corporate financial institutions to provide all core banking services, including but not limited to:

a) Daily banking services;
b) Accepting pre-authorized payments into the Town's accounts;
c) Accepting online banking payments into the Town's accounts;
d) Providing online banking for vendor payments;
e) Ability to transfer online between Town's accounts;
f) Providing electronic funds transfer for payroll; and
g) Providing electronic funds transfer for vendors.

2.2 The Town currently maintains a number of accounts of varying size, transaction volume and functions. For the financial purposes, the Town's accounts are consolidated into one net position. The Town expects to earn interest on the combined net cash balances of its accounts.

2.1 The Town requires the following deposit-related services:

a) Same-day credit for deposits made in-branch during banking hours;
b) Deposit bags and deposit slips supplied by the Financial Institution;
c) Prompt investigation of missing deposits, and back-dating of associated lost interest;
d) Assumption of responsibility for validity of the cheque body, figure, date and signature;
e) Prompt response to tracing request regarding NSF cheques and charge backs;
f) Securely deposit cheques to business account for same day process, remotely without the requirement to bring the cheques to the bank for deposit; and
g) Receive online bill payment from customers of multiple banks and credit unions at no cost to the Town.

2.2 The Town requires the following payment-related services:

a) Online access to all accounts;
b) Ability to implement stop-payments electronically from a Town workstation, and to report these stop-payments with date and time to the Town;
c) Assumption of responsibility for validity of the cheque body, figure, date and signature;

d) Fraud detection, investigation and return of any counterfeit or altered cheques;
e) Bi-weekly and monthly direct deposit to employee bank accounts;
f) Monthly pre-authorized withdraws for specific vendors; and
g) Electronic File Transfers to specific vendors.

2.3 The Town requires the following **pre-authorized payment program-related services:**

a) Continuation of the monthly pre-authorized payment for tax accounts with the Town taking responsibility of the enrollment and administration of the program. The Town will create a file using corporate software and the financial institution will validate the file, advise of any errors for correction, and collect the funds and deposit them into the Town's account;
b) Continuation of the quarterly pre-authorized payment for utility accounts with the Town taking responsibility of the enrollment and administration of the program. The Town will create a file using corporate software and the financial institution will validate the file, advise of any errors for correction, and collect the funds and deposit them into the Town's account; and
c) Possible expansion of the pre-authorized program to include accounts receivable and recreation passes.

2.4 The Town requires the following **reporting-related** services:

a) Fully secured, real-time, 24-hour online access to all Town accounts by 6 staff with two levels of authority;
b) Within five (5) working days of a month-end, provide a complete statement of debts and credits for the prior month; and
c) Clearly label the debits and credits that pass through the Town's accounts to identify the transaction in order to facilitate the Town's accounting processes.

2.5 The Town is interested in other **enhancements** to business process and customer services.

3.0 Response Content

3.1 All respondents should include the following information in the format of Schedule A. Respondents may submit additional pages describing how each requirement will be met.

3.2 The response must include the branch at which the Town's accounts will be located.

3.3 The response must include information in respect to:

a) your proposed transition plan for transferring core financial services, as well as any cost associated with the transfer;
b) the resources that you would dedicate to the transition;

c) the resources that the Town would need to provide;
d) any technical and/or system issues that would have to be resolved; and

3.4 The response must indicate:
e) if same-day credit for deposits made in-branch during banking hours is provided and the arrangements for receiving the deposit;
f) if deposit bags and deposit slips are supplied by the Financial Institution, and if there is a cost;
g) the timeline and procedures for prompt investigation of missing deposits, and back-dating of associated lost interest;
h) that you assume the responsibility for validity of the cheque body, figure, date and signature;
i) the timelines on tracing requests regarding NSF cheques and charge back; and
j) the Canadian financial institutions that you will receive customer payments, and the associated costs of receiving the payments.

3.5 The response must indicate if you offer the service of securely depositing cheques to business account for same day process, remotely without the requirement to bring the cheques to the bank for deposit, and indicate the cost to set-up and provide the service.

3.6 The response must indicate:
a) if you can meet or exceed the requirements of the pre-authorized payment plan;
b) a description of the pre-authorized program offered;
c) the timelines to receive pre-authorized file to meet the processing deadlines;
d) description of the conversion of the existing pre-authorized payment plans to reduce impact on the Town and the Town's customers;
e) outline the resources available to assist in expanding the program, including costs the municipality would bear; and
f) identify any technical issues that might arise during the conversion or by offering the service;

3.7 The response must indicate:
a) if you can meet or exceed the reporting requirements;
b) include a description of your on-line functionality;
c) provide a demonstration of your online system functionality if requested by the Town as part of the valuation process; and
d) identify security standards and procedures that will be used to ensure the protection of confidential and sensitive Municipal data.

3.8 The response may include other services or opportunities not listed in this RFP to enhance the Town's business practices and/or customer service levels. Such

services and opportunities should be clearly detailed and list any associated costs to provide the service or opportunity.

3.9 The response must include all associated costs, not identified in Schedule A, which you anticipate the Town would incur.

2. Evaluation Criteria

The Town will evaluate Proposals based upon but not limited to, the following:

- Quality of the proposal (5 points)
- Demonstrated alignment to the Town's Community Benefit Goals (5 points)
- Demonstrated proven experience (10 points)
- Business and technical reputation and capabilities (10 points)
- Accessibility and responsiveness (20 points)
- Costs (35 points)
- Ease of conversion and transitional requirements (10 points)
- Proponent's innovative ideas (5 points)
- Reference checks (pass/fail)

Proposals will be reviewed and evaluated by a selection committee comprised of Town staff. During the evaluation process any or all of the proponents may be invited to give written or oral presentations and/or participate in interviews with the committee.

3. Enquiries

All enquiries related to this "Request for Proposal" are to be directed to:

Erin Anderson, Director of Financial Services
eanderson@ladysmith.ca

Enquiries and responses will be recorded and will be made available, by request, to all proponents for examination.

A proponents' meeting will not be held.

4. Proposal Submissions

Proponents are requested to submit their proposals no later than DATE at 2:00 pm to the attention of:

Joanna Winter, Corporate Officer
Town of Ladysmith
410 Esplanade - P.O. Box 220
Ladysmith, BC V9G 1A2
Email: jwinter@ladysmith.ca

Proposals must submitted in (1) hard copy and (1) electronic pdf on a USB stick. The Town is not responsible for the timely receipt or adequacy of any electronic transmissions, and late receipt of Proposals via email or facsimile will be cause for rejection of a Proposal

All submissions must be clearly marked "Request for Proposals No. 2017-FIN-01".

The successful bidder will be required to obtain and provide proof of the following:

- A current business licence for operating in the Town of Ladysmith
- A Clearance Letter from WorkSafe BC that confirms they are registered and in good financial standing with WorkSafe BC
- Minimum $2 million liability insurance with the Town of Ladysmith named as additional insured
- Federal, provincial and municipal permits when and where applicable

Submissions in response to this RFP will be opened publicly at the Town of Ladysmith City Hall at 2:15p.m. on DATE

The Town reserves the right to accept or reject any or all Proposals either whole or in part at any time, or waive formalities in, or accept a Proposal either whole or in part which is deemed most favourable in the interest of the Town. The Town will be under no obligation to proceed further with any submitted Proposal and, should it decide to abandon same, it may, at any time, invite further proposals for the supply of the described services or enter into any discussions or negotiations with any party for the provision of the services. No alterations, amendments or additional information will be accepted after the closing date and time unless invited by the Town.

The lowest or any submission in response to this RFP will not necessarily be accepted. The bids will be considered on their merits and it is not the intention of the Municipality to buy on price alone.

The Town of Ladysmith Purchasing Policy entails the following Principles of "Best Value":

- Procure the goods and services requirements of all departments in an efficient, timely and cost effective manner while maintaining the necessary controls;

- Engage in an open bidding process wherever practical;
- Ensure maximum value is obtained during the acquisition of goods and services. The concept of maximum value includes the value derived from social impacts (See desired Community Benefit Goals below). Where applicable, the total cost of the goods and services purchased should be taken into account. Total cost may include but not be limited to acquisition cost, disposal cost, residual value, training cost, maintenance cost, product performance, social impact and environmental impact;

  Community Benefit Goals:

  Economy

  - Demonstrate job creation within the local area, which is defined as the Cowichan Valley Regional District and the Regional District of Nanaimo.
  - Contribute to a stronger local economy (buy local)
  - Increase training and apprenticeship opportunities
  - Provide work experience and employment opportunities for youth aged 15 to 24
  - Ensure that a Living Wage for the local area is paid

  Public Spaces

  - Enhance community recreation, arts and/or culture infrastructure
  - Improve and enhance public spaces
  - Improve access to public spaces for people living with disabilities

  Environment

  - Demonstrate that work undertaken exceeds requirements for environmental standards

- Take into account wherever practical the commitment to social responsibility, protection of the environment, and energy conservation;
- Ensure the acquisition of goods and services meets the requirements of applicable legislation and trade agreements, including the New West Partnership Trade Agreement, and the Agreement on Internal Trade; and
- Ensure that maximum value is realized when disposing of surplus goods, materials and equipment.

Submissions must follow the Proposal Format as outlined in Schedule A of the RFP.

5. Ownership of Proposals

All Proposals and subsequent information materials shall become the property of the Town of Ladysmith after the closing date and time and will not be returned.

The Proposals will be held in confidence by the Town subject to the provisions of the Freedom of Information and Protection of Privacy Act. This Request for Proposals and all associated documentation is the property of the Town of Ladysmith and shall not be copied or distributed without the prior written approval of the Town.

Schedule A

STAFF REPORT TO COMMITTEE

From: Erin Anderson, Director of Financial Services
Geoff Goodall, Director of Infrastructure Services
Meeting Date: August 14, 2017
File No: 5280

RE: Low Flush Toilet Rebate

RECOMMENDATION(S)

That the Committee recommend to Council that:

1) Staff update the Toilet Rebate Program to include a varying rebate depending on the water efficiency of the toilet, as:
   a) single 6 litre flush rebate at minimum of $75.00; or a
   b) dual flush 4.1/6 litre rebate at a minimum of $75.00.
2) Confirm the lifetime maximum of 2 rebates per residence or business.
3) Require proof of proper disposal of a 13L or greater toilet.

PURPOSE

PREVIOUS COUNCIL DIRECTION/RESOLUTIONS

Resolution	Meeting Date	Resolution Details
CS 2017-186	Jun-05-2017	That Council refer the Low Flush Toilet Rebate Program to staff for review with respect to changes to toilet capacity and any other developments that could affect the program.
CS 2016-339	Oct-17-2016	That Council direct staff to apply the Low Flush Toilet Rebate Program to property owners' utility accounts instead of issuing cheques for the rebate amount.
CS 2008-382	Jul-07-2008	It was moved, seconded and carried that the Toilet Rebate Program be approved as presented and that the details of the program be approved as follows: i. Residents of the Town of Ladysmith connected to the water or sewer system who replace a 13 Litre or 20 Litre flush toilet in their home with a Low or Dual flush toilet shall be provided with a rebate upon the provision of satisfactory evidence of the replacement and appropriate disposal/destruction of the old toilet; ii. Where the replacement toilet is a low flush model or a dual flush model, the rebate shall be $75; iii. There shall be a lifetime maximum of two rebates per residence;

INTRODUCTION/BACKGROUND

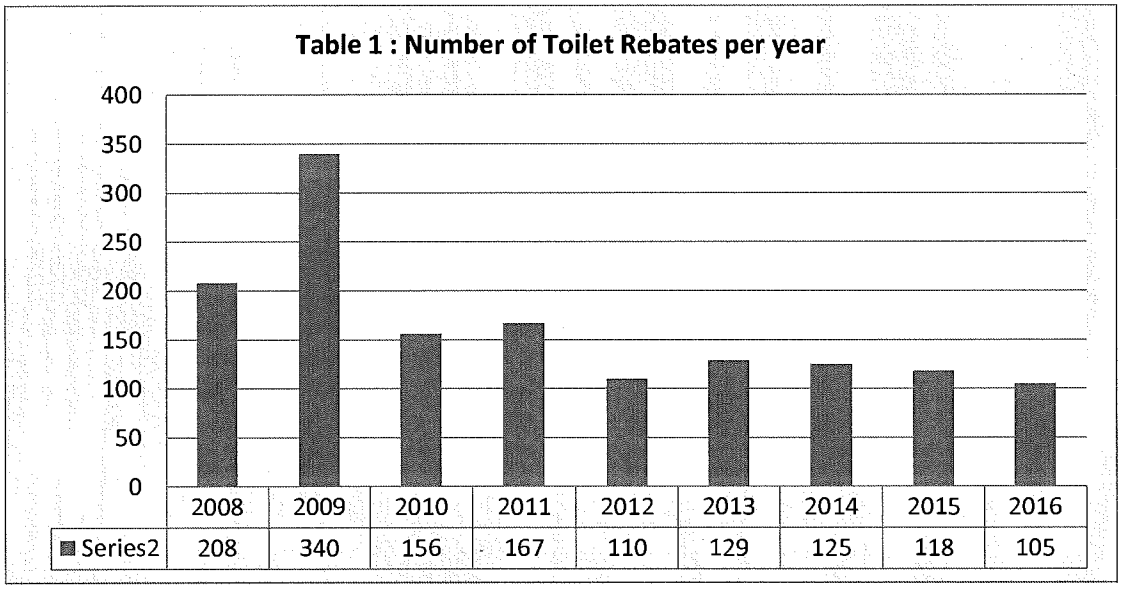
The Town introduced a Toilet Rebate Program in 2008. The purpose of the Program was:

> *To encourage existing water system users to conserve water by replacing old inefficient toilets (13L or 20L) with more efficient models.*

The current program offers a $75.00 rebate when a single flush (4.8 litre) or a dual flush (3 or 6 litre) toilet replaces and older inefficient toilet.

DISCUSSION

Originally, the rebate was to conclude in 2009, though Council has consistently approved rebate program funding from the Water Utility Fund. The greatest number of rebates provided was in 2009 with 340, the lowest was 2016 at 105 (see table 1: Number of Toilet Rebates per year).



The Province's building code regulation requires the installation of 4.8 litres or less high-efficiency toilets to be installed in all new residential projects. For a dual-flush option, the volume per flush is 4.1/6 litres.

Staff are suggesting that a varying rebate be provided depending on the amount of water that the toilet saves. For instance, a toilet that meets the minimum efficiency, at a 4.8 litre single flush, would receive a $75.00 rebate.

4.8 L flush	*x $75.00*	*= $75.00 rebate*
4.8 L flush		

By changing the denominator, a more efficient toilet, such as a 4.1 litre per single flush, would receive a greater rebate:

4.8 L flush	*x $75.00*	*= $87.80 rebate*
4.1 L flush		

A dual flush toilet would be eligible for a similar structure rebate. The standard dual-flush option is 4.1/6 litres option. The proposed minimum rebate formula would be based on an average of the two flush options:

(4.1 + 6 L flush) ÷ 2	*x $75.00*	*= $75.00 rebate*
(4.1 + 6 L flush) ÷ 2		

Again, a more efficient system would be entitled to a larger rebate:

(4.1 + 6 L flush) ÷ 2	*x $75.00*	*= $84.17 rebate*
(3 + 6 L flush) ÷ 2		

SCOPE OF WORK

All toilet rebates are reviewed by Public Works to ensure program eligibility. Once approved, the information is provided to Finance where the credit is applied to the Utility Account or, in the case of a strata owner, a cheque is mailed to the property owner.

ALTERNATIVES

Other municipalities offer a rebate for dishwashers and clothes washers. Williams Lake maintains an approved list of dishwashers and clothes washers that would be eligible for the rebate.

Outdoor water efficiency rebates, such as rain barrels, are offered in other municipalities.

FINANCIAL IMPLICATIONS

The 2017-2021 Financial Plan included a budget of $10,000 each year in toilet rebates.

LEGAL IMPLICATIONS

n/a

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

Once approved by Council, The Town's Communications personnel will provide education to the community so they can consider the rebate as part of their toilet purchase.

Information would be available on the Town's website, though the Utility inserts as well as on social media.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

Public Works will make the determination on the amount of the rebate available. Finance will apply the credit against the property owners' utility bill.

RESOURCE IMPLICATIONS

Additional customization to the Town's website may be required to easily create a rebate calculator.

ALIGNMENT WITH SUSTAINABILITY VISIONING REPORT

Offering this program supports the Town's Sustainability Goal 3 – Reduce potable water usage and manage wastewater efficiently including re-use.

ALIGNMENT WITH STRATEGIC PRIORITIES

This aligns with the strategic priority of Watershed Protection and Water Management.

SUMMARY

The Committee directed staff to review the current Toilet rebate program. Staff suggests a varying rebate based on a prescribed formula.

Erin Anderson, Director of Financial Services

8 AUG 2017.
Date Signed

I concur with the recommendation.

Per

Guillermo Ferrero, City Manager

ATTACHMENT(S)

none