APPENDIX III

OCP for the ELECTORAL AREAS INDICATOR DASHBOARD

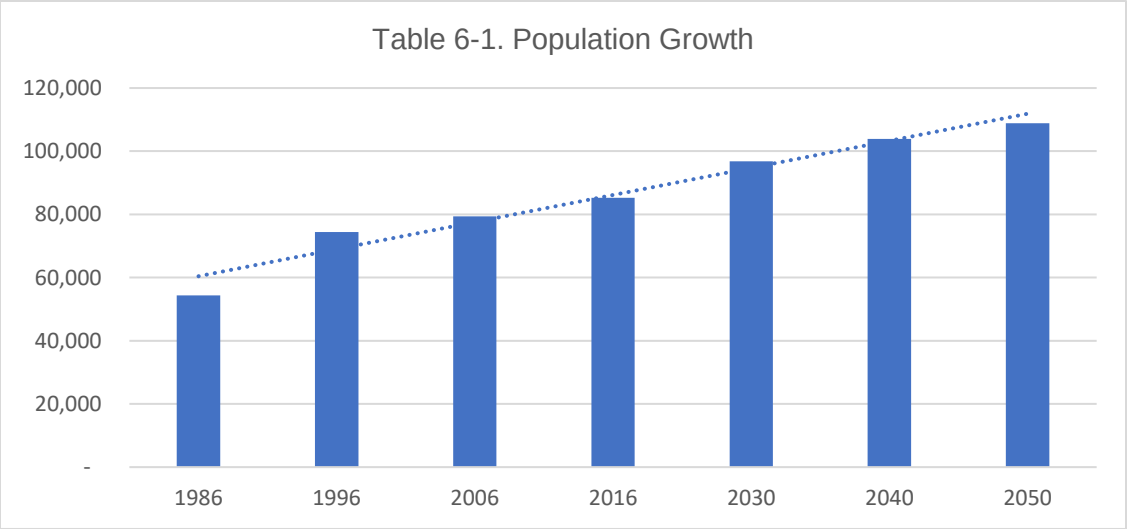
January, 2021

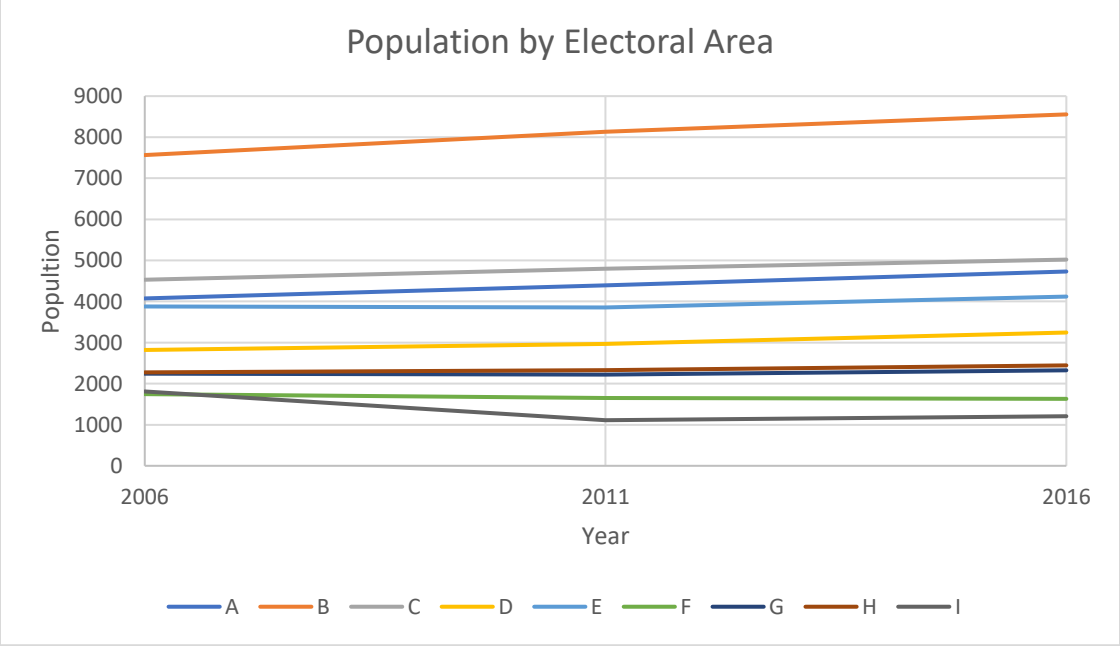
The following indicators provide a concrete, data driven representation of how the Official Community Plan for the Electoral Areas (OCP) goals, objectives and policies impact the region. This work began with research into CVRD documents and other sources for indicators that are already being tracked. This data was then refined to focus on indicators that were relevant to OCP goals, which are informed by its policies and objectives. The result is an indicator dashboard that includes 37 different indicators providing an objective look at the Cowichan Valley through 8 different policy areas. A summary of the indicators under their policy area headings is provided below in Table 1-1.

Table 1-1. HOCP Indicators	
Managing growth sustainably	
1. Population growth	
Improve and expand the range of housing	
2. Housing growth	3. CVRD house prices
4. Sales to inventory ratio for housing	5. Affordability
Manage infrastructure sustainably	
6. Mode of transportation to work by electoral area	7. Percentage of population within 400m of a transit line
8. Percentage of population on CVRD utility services	9. Average water consumption
10. Waste stream	11. Asset management
Protect the environment	
12. Area of CVRD impacted by development and logging	13. Area of CVRD protected as park
14. ESA areas in electoral areas	15. Ha of park in electoral areas
16. Indoor and outdoor recreation facilities available	17. Trails km / type / location
18. Sensitive ecosystem protection	19. Water quality
20. Aquifer vulnerability	
Strengthen food and agricultural systems for food security	
21. ALR exclusions and inclusions	22. Average age of farmers
23. Size of CVRD farms	24. Income receipts for farms
25. Land in food production	26. Food insecurity
27. Food processing	
Support heritage, arts and culture	
28. Heritage assets registered by electoral area	29. Types of assets registered
30. Arts grants allocations by art type	
Realize the region’s economic potential	
31. Employment by industry and change over time	32. Labour force education level
33. Median and gross incomes	34. Distribution of household income in electoral areas
35. Industrially designated land available	
Mitigate and adapt to climate change	
36. Corporate GHG emissions	37. Community energy and emission inventories
38. Utilities energy data	39. Solid waste emissions

Objective: Managing growth sustainably

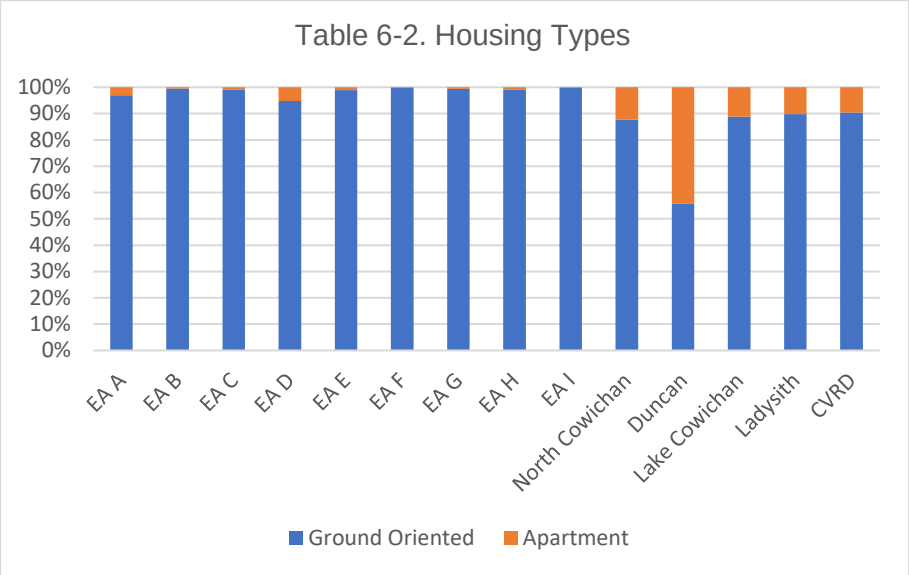
Indicator	Rationale	Data accessibility
1. Population growth	• This data forms the basis for the planning work required to absorb population growth.	• Population growth projections (Long range projections of population, housing and employment in the Cowichan Valley Regional District, 2019, p. 15)

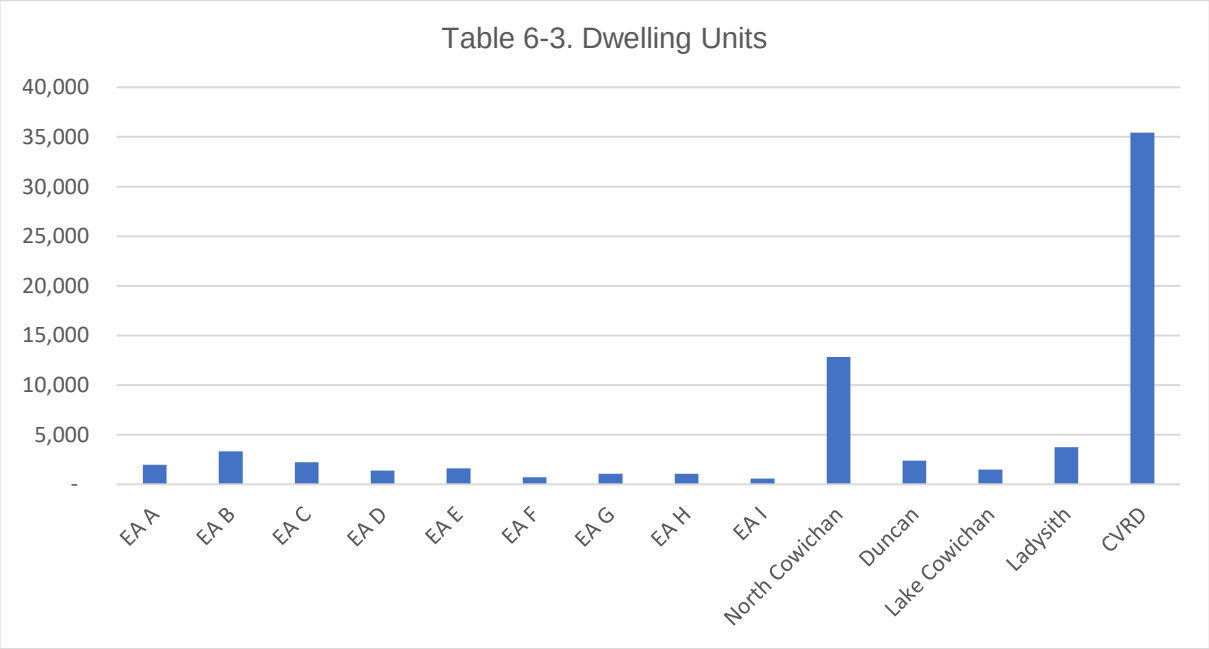




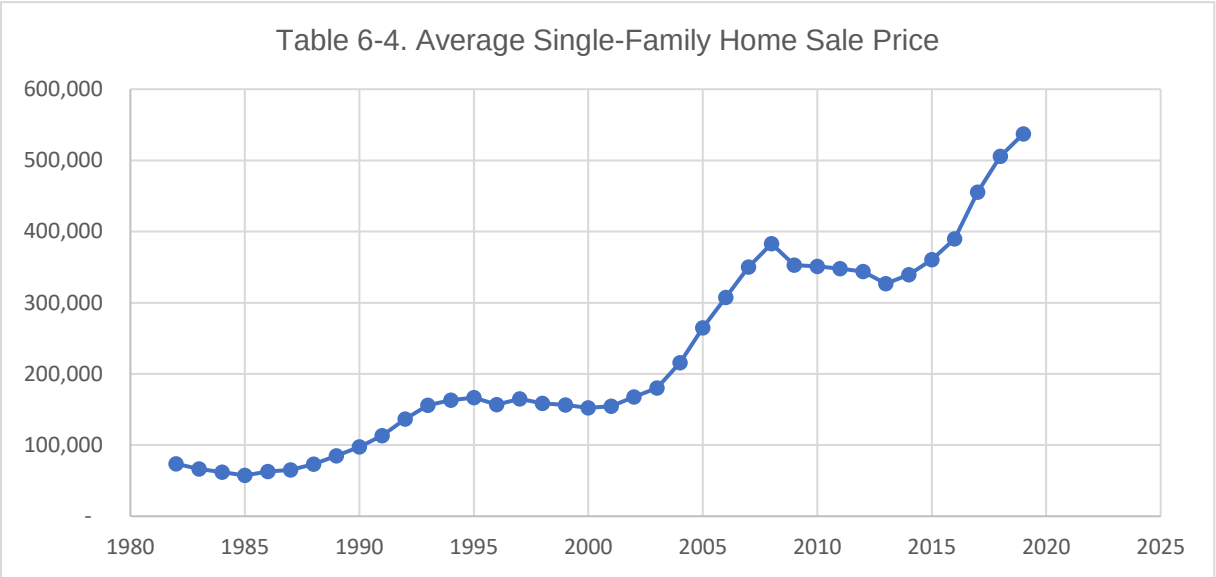
Objective: Improve and expand the range of housing

Indicator	Rationale	Data accessibility
2. Housing growth – units by type and electoral area	• The housing units and types needed form the foundation of planning.	• 2017 population and housing units by electoral area (Long range projections of population, housing and employment in the Cowichan Valley Regional District, 2019, p. 23)

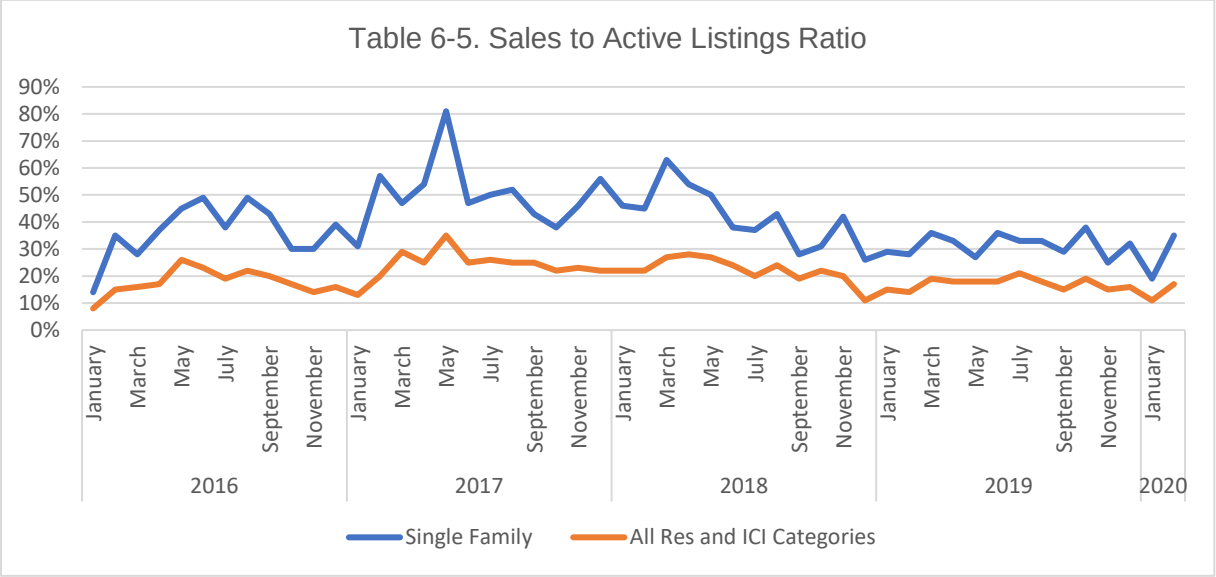




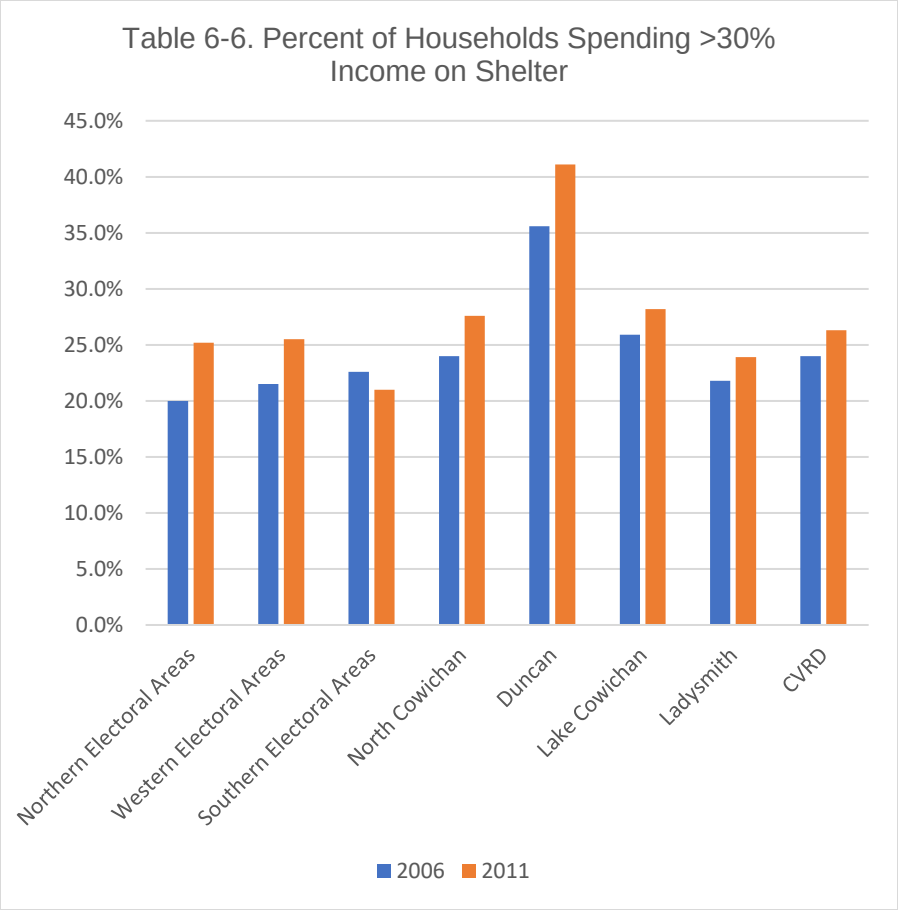
3. CVRD house prices	• Managing the cost of housing needs to be central to all planning.	• VIREB	



4. Sales to inventory ratio for housing	• The ratio between supply (inventory) and demand (sales) determines the change in housing and land prices.	• VIREB	

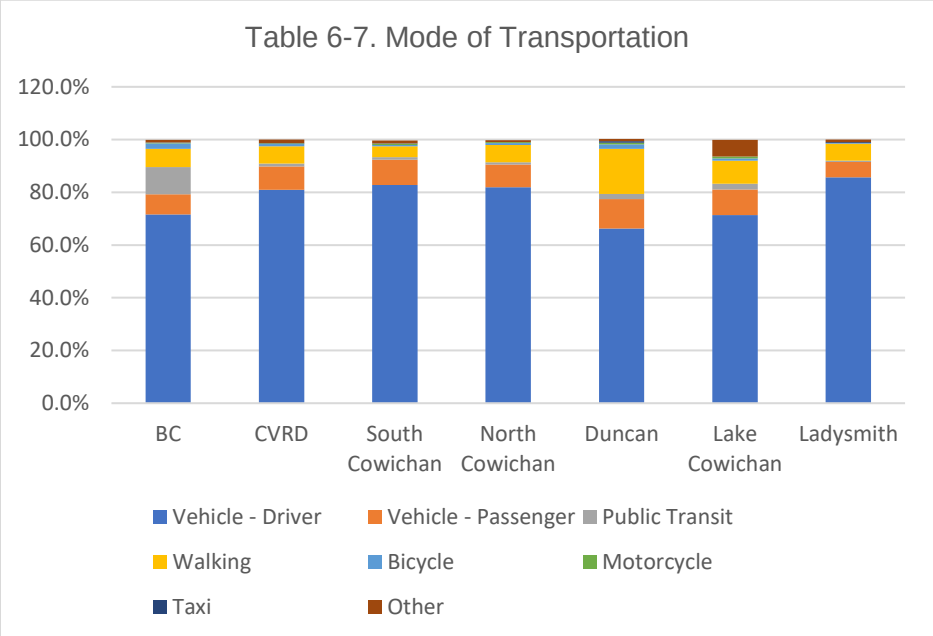


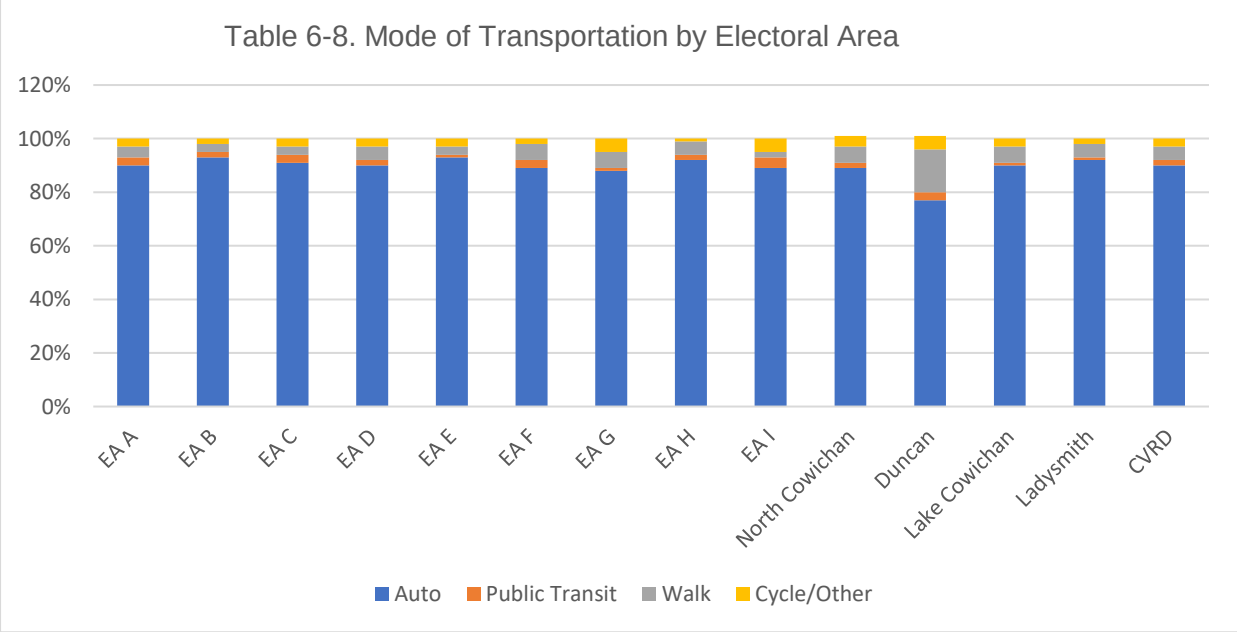
5. Affordability (based on CVRD incomes)	• Housing affordability is a key factor in community health. This indicator informs on the supply of developable land.	• VIREB • Median household income (Long range projections of population, housing and employment in the Cowichan Valley Regional District, 2019, p. 35-37) • Average single family home sale price (Cowichan Attainable Housing Strategy, 2019a, p. 14) • Percent spending >30% of income on housing for renters and owners (Cowichan Communities Health Profile, 2014, p. 63)	



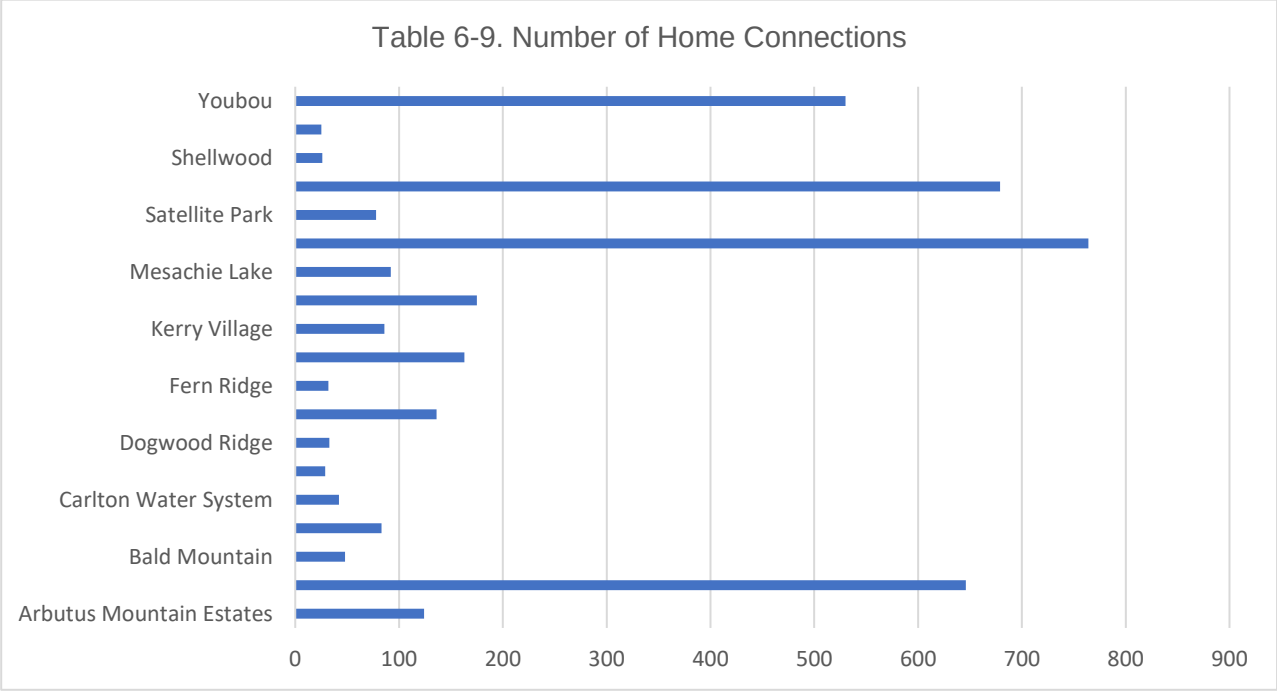
Objective: Manage infrastructure sustainably

Indicator	Rationale	Data accessibility
6. Mode of transportation to work by electoral area	• This indicator shows how people are moving around in the region, and thereby associated emissions and other factors.	• Modal share by area and for CVRD total (Transit Future Plan: Cowichan Valley Region, 2012, p. 34-37) Typo on tables p. 35-37 - CVRD not BC) • Commuting modes of transport (Addendum to The Long-range projections of population, housing and employment in the Cowichan Valley Regional District, 2019b, p. 3)

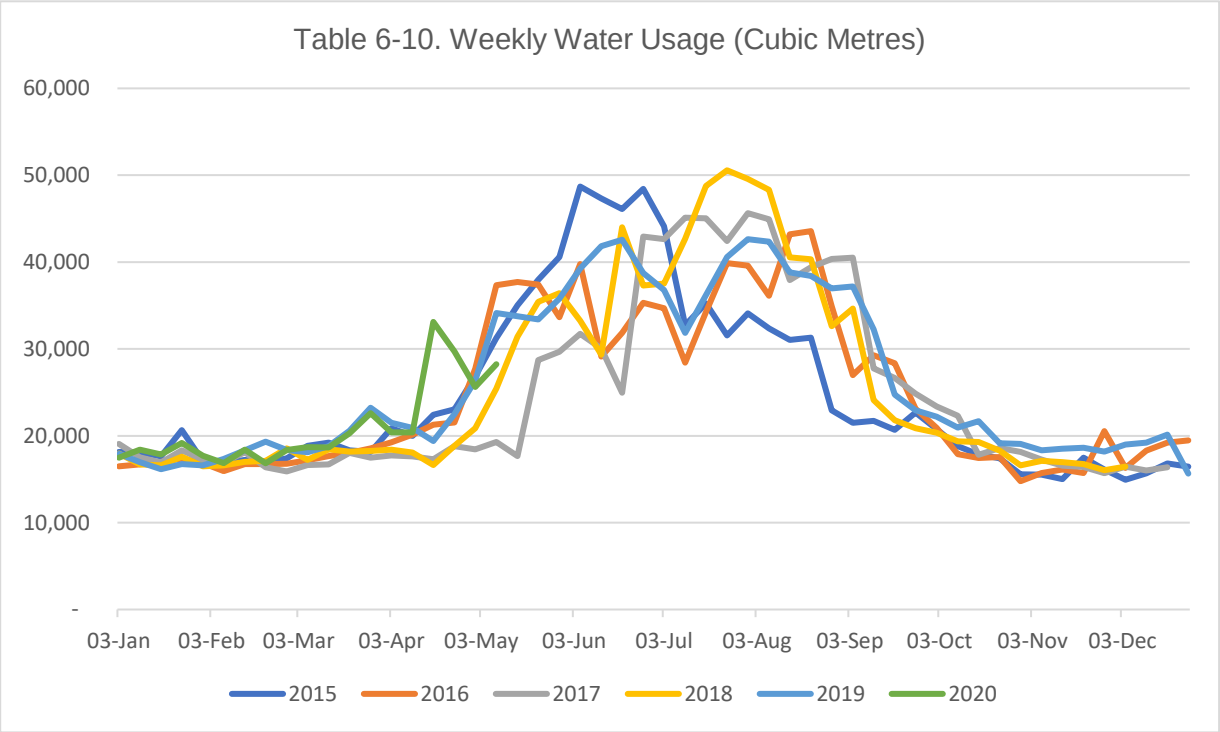




7. Percentage of population within 400m of a transit line **Current Status:** Approximately 50% of residents live within 400m of a transit line.	• This indicator shows potential for transit ridership.	• (2010 State of the Environment, 2010, p. 148) • (Transit Future Plan: Cowichan Valley Region, 2012, p. 49)
8. Percentage of population on CVRD utility services	• For any growth to be denser than 1 unit/ha, it must be serviced with community water and sewer systems. Some utilities are public and some are private. As such servicing is the key indicator for growth management.	• (Water & Wastewater Utilities Review and Assessment for the Cowichan Valley Regional District, 2017, p.22). • (Water Systems, n.d.)



9. Average water consumption	• This indicator shows general water consumption behaviour over the year for multiple years.	• (Weekly Water Use, n.d.)



10. Waste stream	• This indicator measures the level of recycling and implicitly the loading on the landfill.	• Waste Composition (Solid Waste Management Plan Update: Amendment 4, 2018, p. 16-17)

Table 6-11. Diversion Potential

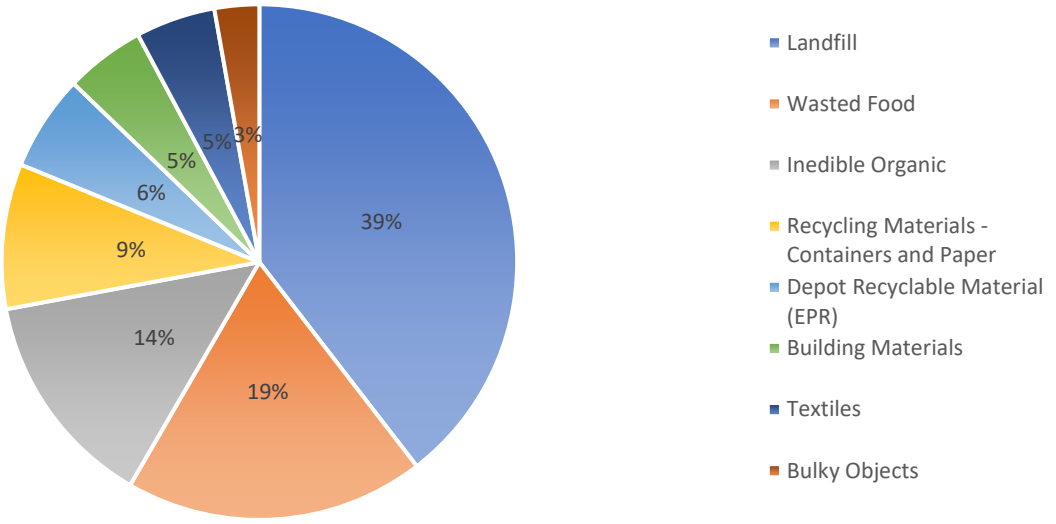
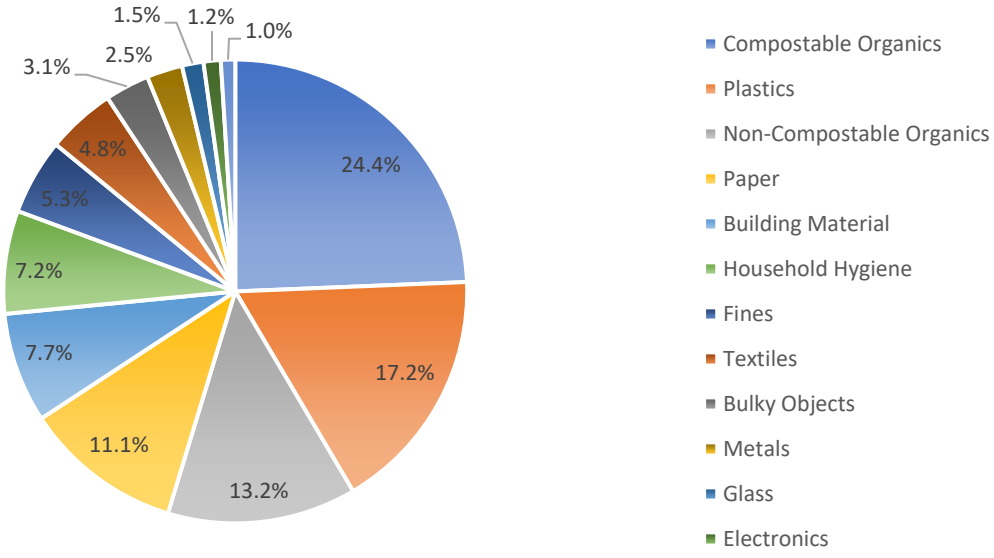


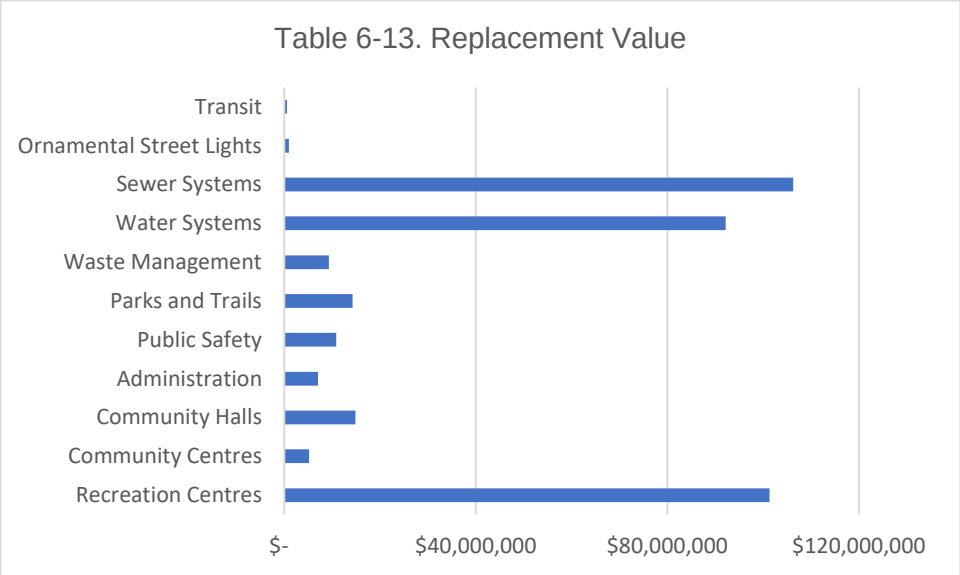
Table 6-12. Waste Composition by Material Category Percentage

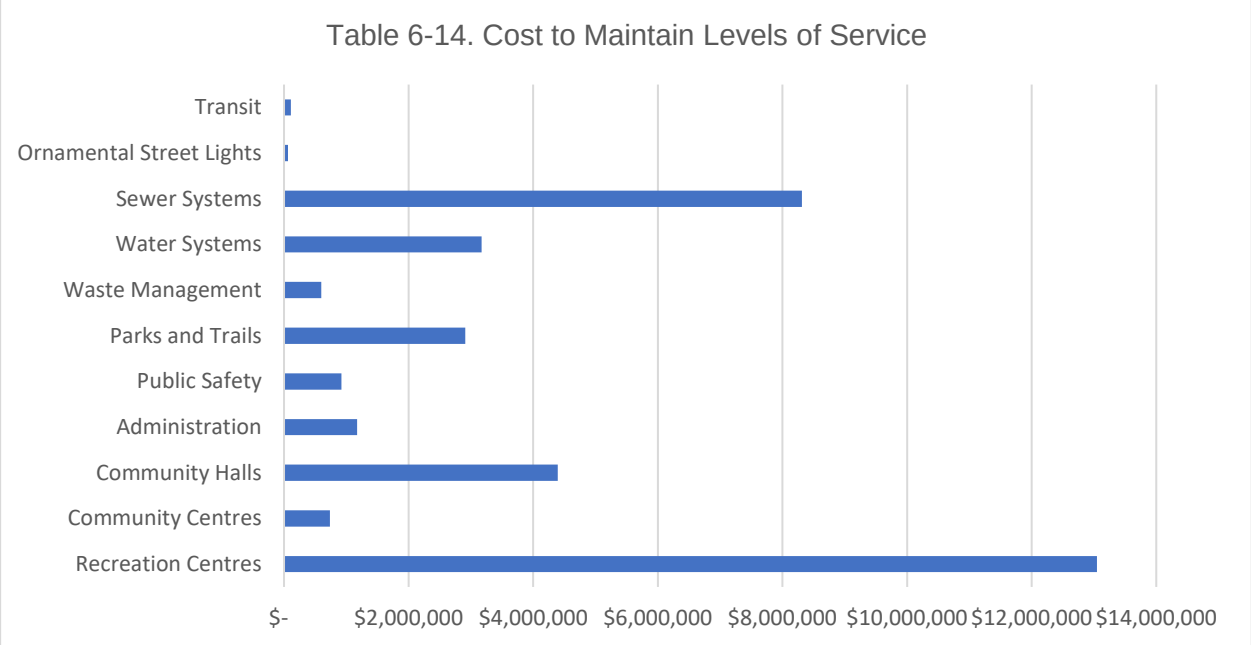


11. Asset management

- This indicator describes the condition of CVRD owned assets and the issues in maintaining these assets over the next 10 years.

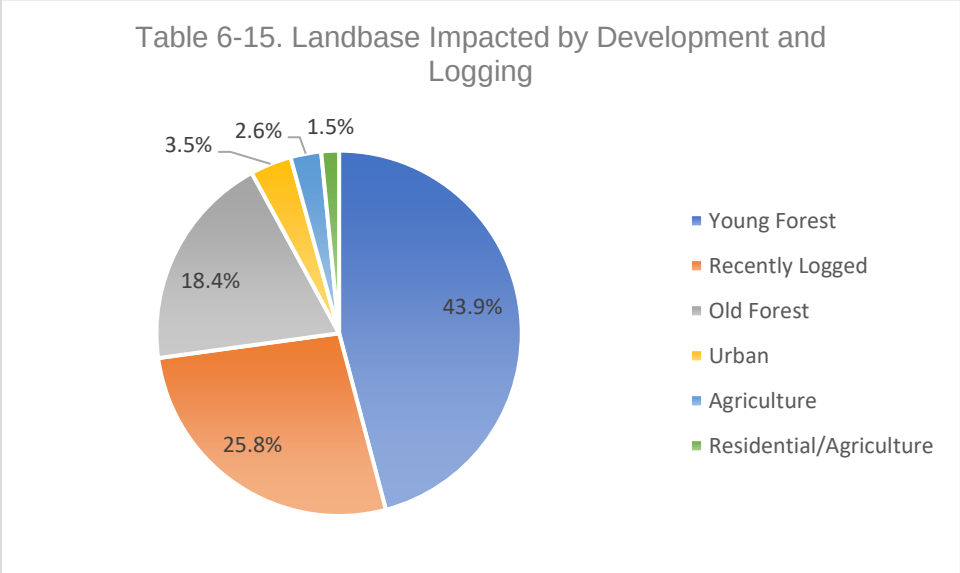
- Estimated cost to maintain existing infrastructure (Corporate Strategic Asset Management Plan: 2020, 2020, p. 52)
- 10 year renewal plans for CVRD assets and condition of assets (Corporate Strategic Asset Management Plan: 2020: Appendix D, 2020, p. 7-19)



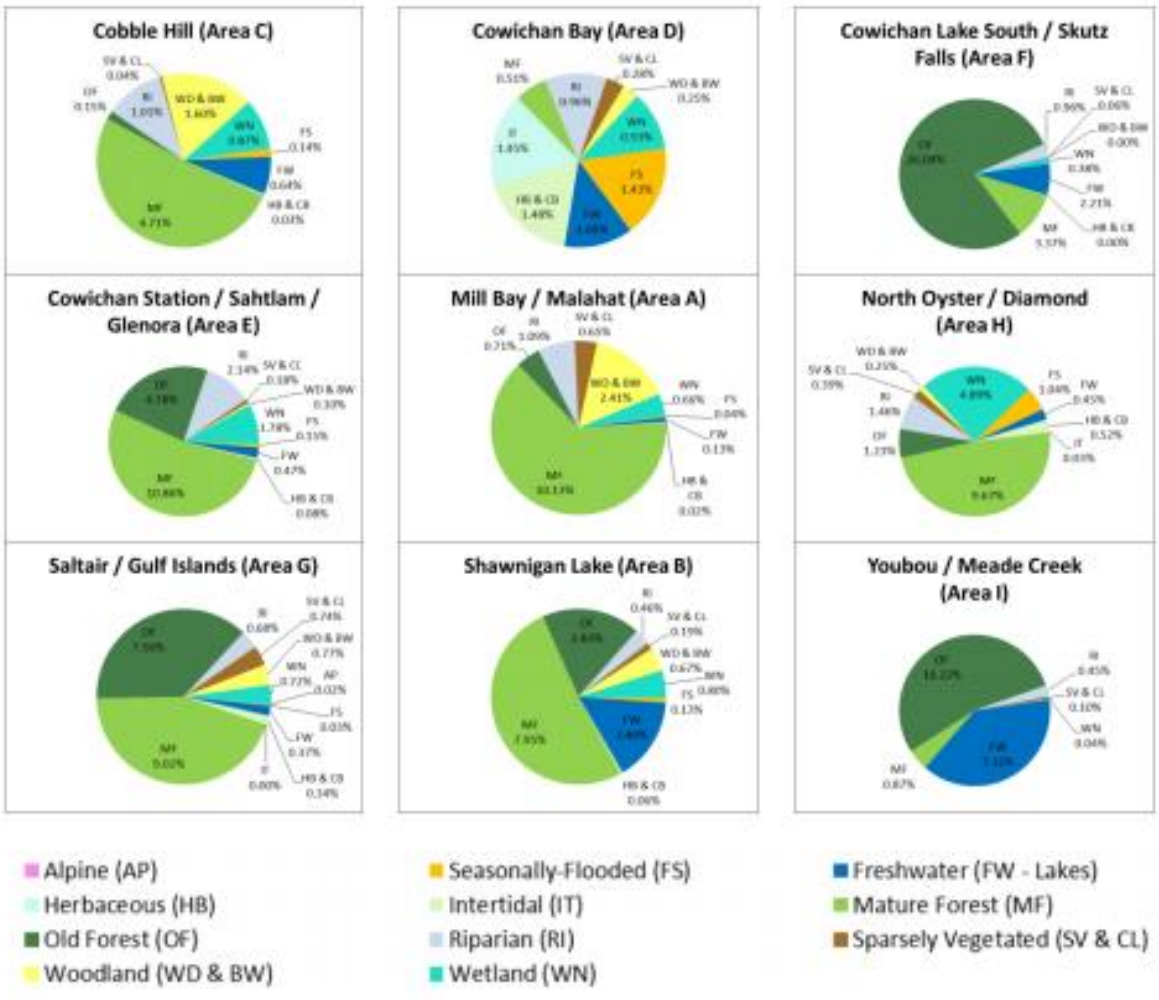


Objective: Protect the environment

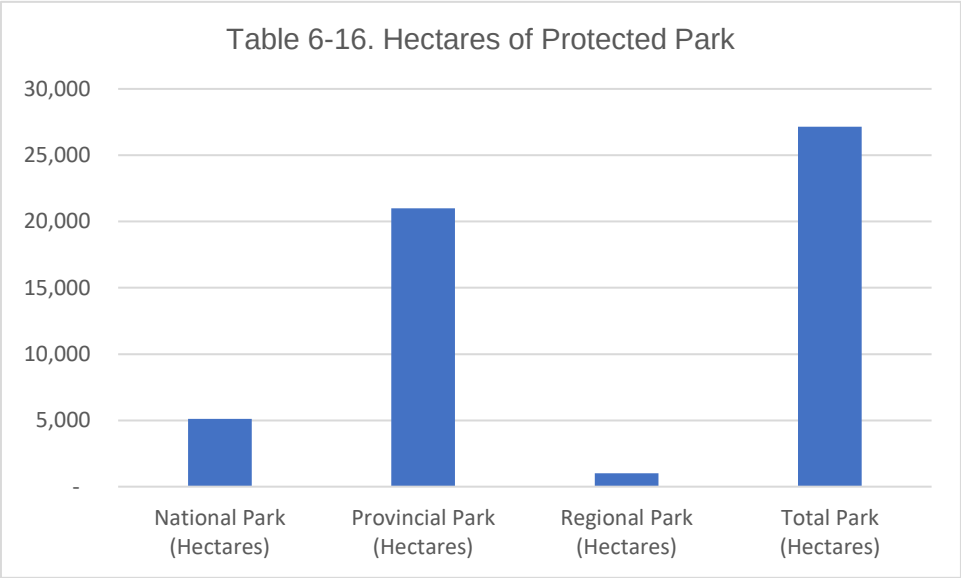
Indicator	Rationale	Data accessibility
12. Area of CVRD impacted by development and logging	• This indicator shows changes of land use over time and erosion of natural areas.	• % breakdown of land-use type in CVRD (Cowichan Region State of Environment Report: Update 2014: Landbase, 2014, p. 4)



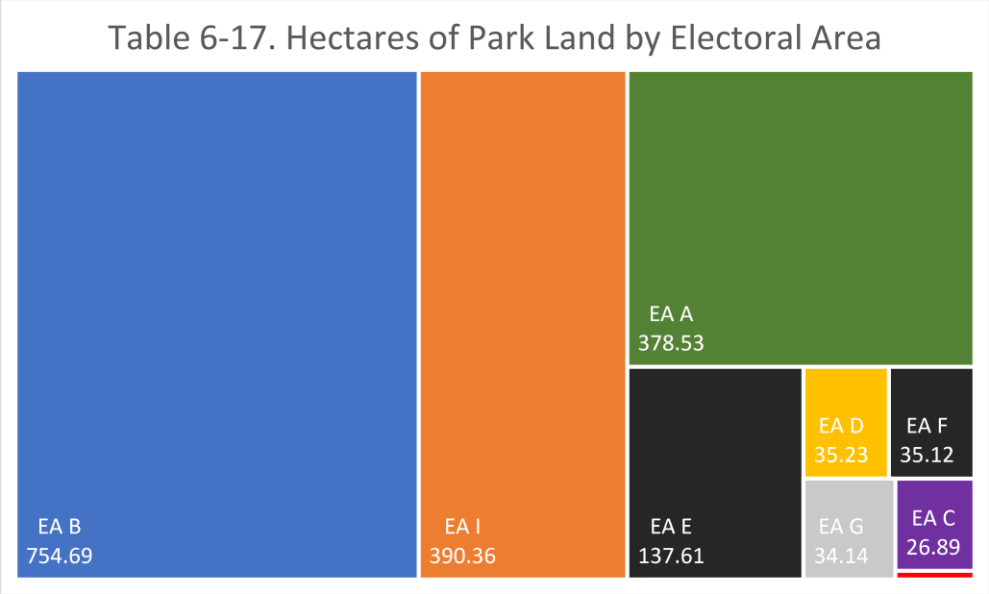
13. Environmentally sensitive areas	• This indicator shows area of different types of ESAs in each electoral area – so change can be tracked over time.	• https://www.cvrd.bc.ca/DocumentCenter/View/90505/Part-1_ESA-Inventory-Report_May-2018



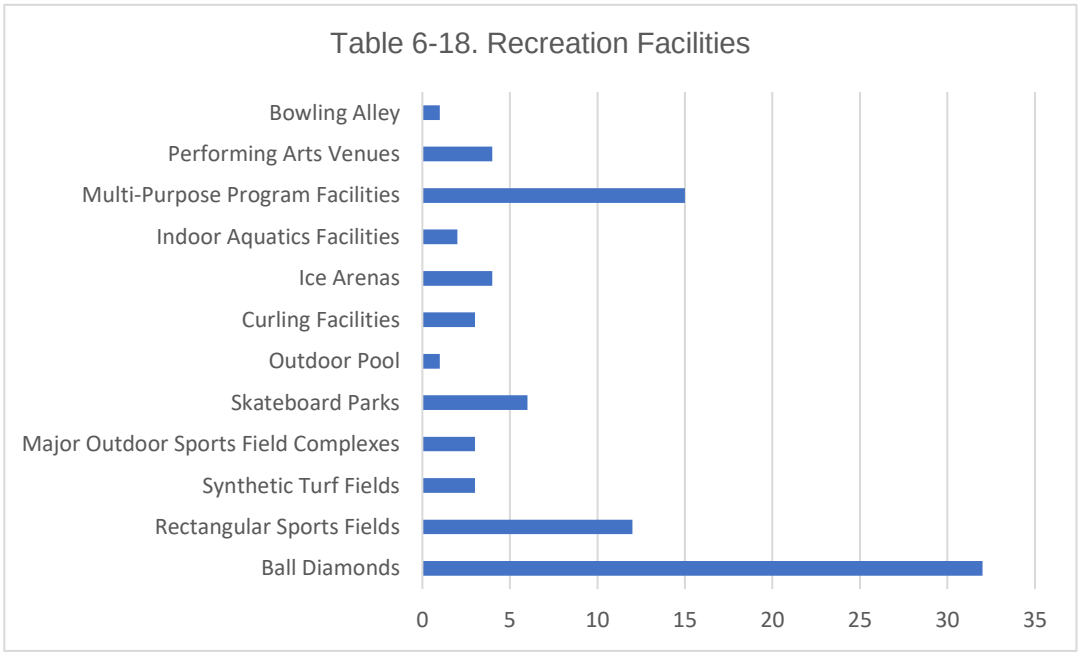
14. Area of CVRD protected as park	• This indicator shows area dedicated and managed as park and change over time.	• Area of protected park (2010 State of the Environment, 2010, p. 42)



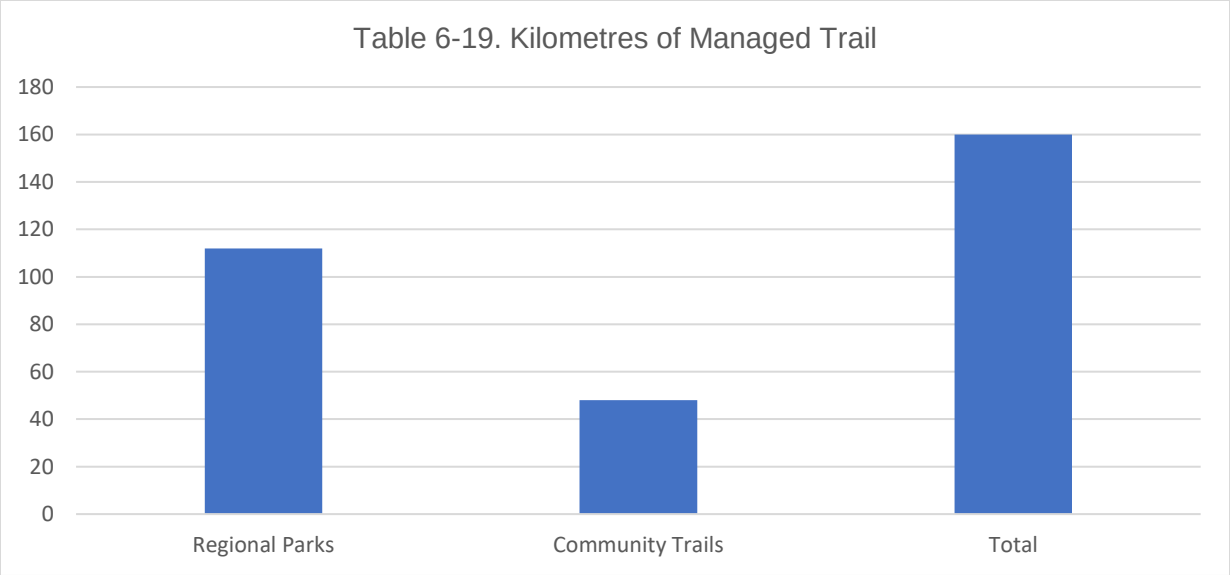
15. Ha of park in electoral areas **Current status:** 26,981 ha or 8.594% of plan area.	• This indicator shows the investment and access to parks across the region and informs future investment.	• HOCP Performance Measures Table (p. 49)



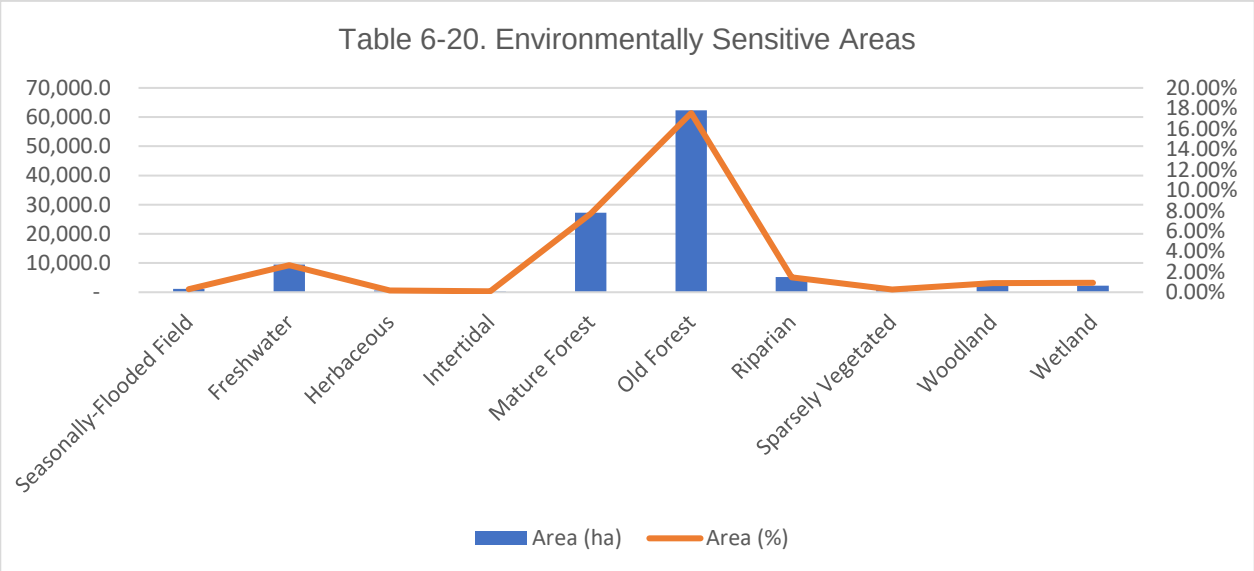
16. Indoor and outdoor recreation facilities available	• This indicator shows access to various facilities within different areas of the region and informs on future investments for growth areas.	• Regional recreational strategic plan 2019 • MOCP may require GIS analysis for ratios in new growth areas.



17. Trails km / type / location	• This indicator shows what trails exist now and which ones are being added over time.	• (Corporate Strategic Asset Management Plan: 2020, 2020, p. 12)



18. Sensitive ecosystem protection	• This indicator shows the percentage of the CVRD that has significant vegetation or forest on it, which indicates to a certain extent the amount of habitat available and the relative carbon sequestration performance.	• Area and % of CVRD by Environmentally Sensitive Area type (Environmentally Sensitive Areas Mapping in the Cowichan Region: Phase II, 2018, p. 9, Appendix D)



19. Water quality	• Lakes and rivers support human settlement, recreation and natural environments for plants and animals. As such, water quality is important to monitor and understand.	• Government of BC: Surface Water Monitoring Sites • Government of BC: Groundwater Level Data

Table 6-21. CVRD Groundwater Quality				
Parameter	Location	Date	Result	Units
Phosphorus	Lake Cowichan (aquifer 178)	2015-09-22	0.263	mg/L
Phosphorus	Ladysmith (aquifer 162)	2016-11-16	0.0248	mg/L
Phosphorus	Duncan (aquifer 186)	2016-08-16	0.0022	mg/L
Phosphorus	Cobble Hill (aquifer 197)	2013-10-31	0.0525	mg/L
Nitrogen	Lake Cowichan (aquifer 178)	2015-09-22	0.319	mg/L
Nitrogen	Ladysmith (aquifer 162)	2016-11-16	0.088	mg/L
Nitrogen	Duncan (aquifer 186)	2016-08-16	0.126	mg/L
Nitrogen	Cobble Hill (aquifer 197)	2013-10-31	0.093	mg/L
Metals	Lake Cowichan (aquifer 178)	2015-09-22	6.11544	mg/L
Metals	Ladysmith (aquifer 162)	2016-11-16	2.176075	mg/L
Metals	Duncan (aquifer 186)	2016-08-16	0.995665	mg/L
Metals	Cobble Hill (aquifer 197)	2013-10-31	7.429068	mg/L

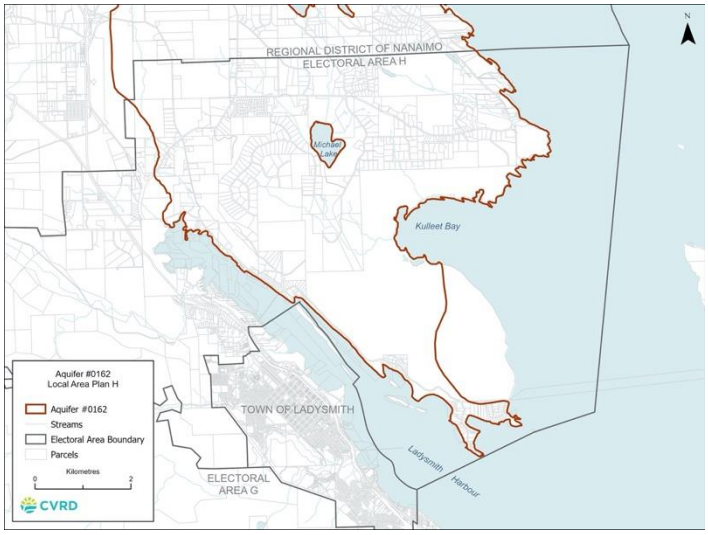


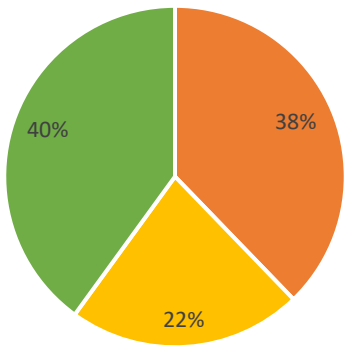
Figure 1: Location and extent of Aquifer 162

Table 6-22. CVRD Surface Water Quality					
Parameter	Location	Date	Depth (m)	Result	Units
Turbidity	Cowichan Lake	2020-03-10	1	0.42	NTU
Turbidity	Shawnigan Lake	2020-03-12	1	0.65	NTU
Turbidity	Quamichan Lake	2020-02-26	1	1.93	NTU
Temperature	Cowichan Lake	2020-03-10	1	6.29	C
Temperature	Shawnigan Lake	2020-03-12	1	5.91	C
Temperature	Quamichan Lake	2020-02-26	1	6.37	C
E Coli	Drinking water and recreation areas. Cowichan Lake - Marina	2013-12-02	0.5	<1	CFU/100mL
E Coli	Shawnigan Lake South End	2003-08-13	0.5	1	CFU/100mL
E Coli	Quamichan Lake	2017-08-29	1	<1	CFU/100mL
E Coli	Holland Lake Outflow	1994-05-18	0	0	CFU/100mL
E Coli	Stocking Lake	2001-11-21	-	<1	CFU/100mL
E Coli	Koksilah River	2017-08-29	-	72	CFU/100mL
E Coli	Cowichan River	2017-08-29	-	6	CFU/100mL
E Coli	Chemainus River	2012-03-20	0.5	10	CFU/100mL
E Coli	Spiers Creek at Hillbank Rd.	2017-08-08	-	320	CFU/100mL
E Coli	Averill Creek Near Duncan	2017-08-29	-	10	CFU/100mL
E Coli	Shawnigan Creek	2018-11-29	-	43	CFU/100mL
Metals	Cowichan River	2013-10-29	0.5	12.23	mg/L
Metals	Shawnigan Creek	1995-11-01	0.5	5.45	mg/L
Metals	Busy Place Creek	2014-11-12	0.5	4.18	mg/L
Nitrogen	Cowichan Lake	2020-03-10	1	0.051	mg/L
Nitrogen	Shawnigan Lake	2020-03-12	1	0.107	mg/L

Nitrogen	Quamichan Lake	2020-02-26	1	0.29	mg/L
Phosphorus	Cowichan Lake	2020-03-10	1	0.0033	mg/L
Phosphorus	Shawnigan Lake	2020-03-12	1	0.0041	mg/L
Phosphorus	Quamichan Lake	2020-02-26	1	0.259	mg/L

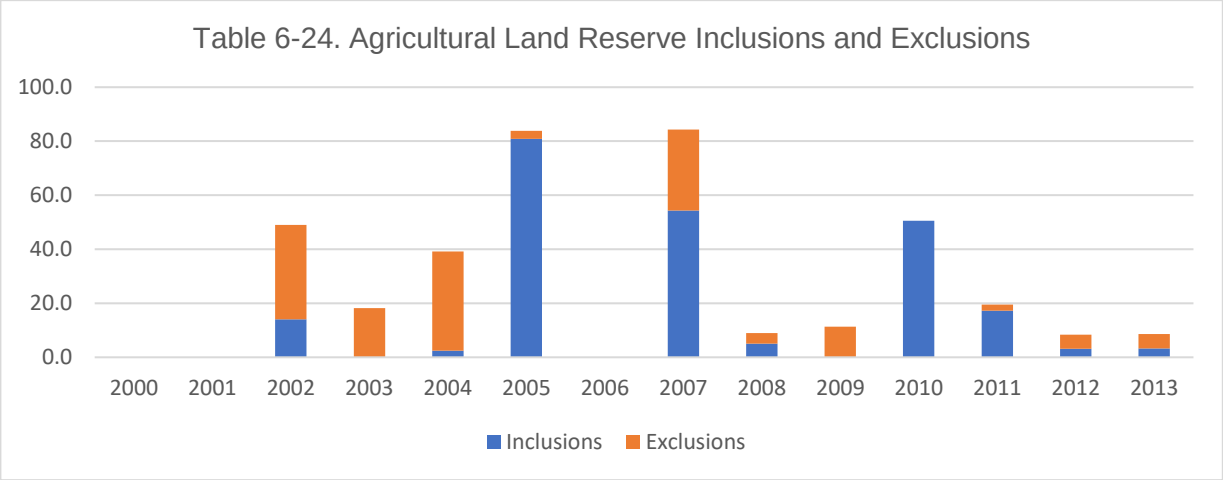
20. Aquifer Vulnerability	• Groundwater aquifers provide a significant amount of drinking water in the CVRD. Areas of high intrinsic vulnerability offer less natural protection than areas of low or moderate vulnerability; therefore, land use activities which pose a high hazard should be discouraged from these areas, or require much more stringent hydrogeological assessment and reporting requirements to ensure prevention of contamination is maximized..	• https://www.cvrd.bc.ca/DocumentCenter/View/7838/Guide-to-use-of-intrinsic-aquifer-vulnerability-m?bidId=

Table 6-23. Aquifer Vulnerability



Objective: Strengthen food and agricultural systems for food security

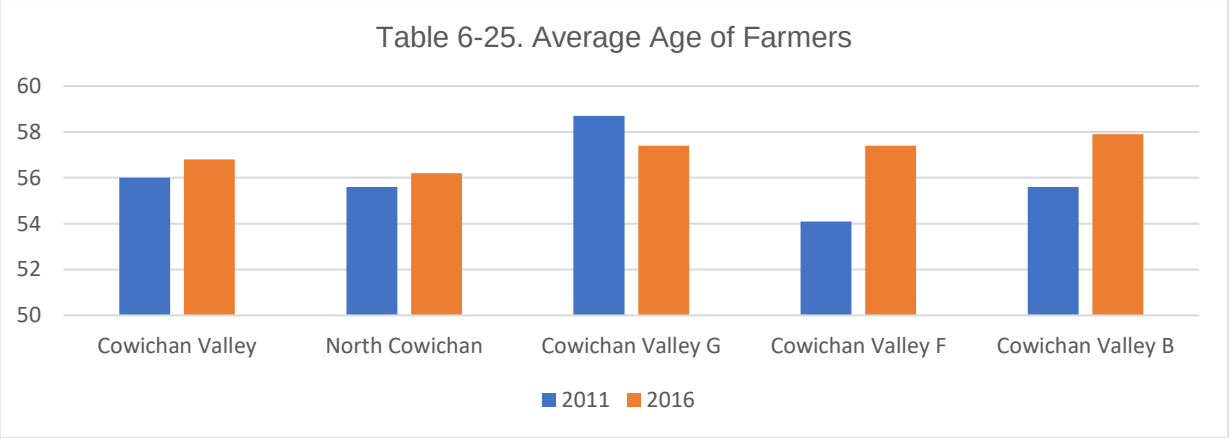
Indicator	Rationale	Data accessibility
21. ALR exclusions and inclusions	• This indicator shows the stability of the ALR and its farmland base in the CVRD.	• ALR inclusions and exclusions and ha of land farmed (Cowichan Region State of Environment Report: Update 2014: Farm Land and Food Security, 2014, 2014, p. 6)



22. Average age of farmers

- This indicator shows the long-term succession capacity for the region's farms and the ag sector in general.

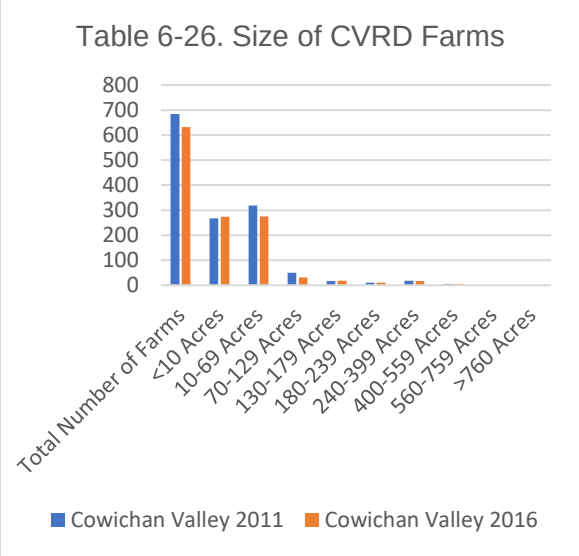
- Average age of farm operators in CVRD 2011 and 2016 (Statistics Canada)
- Average age of farm operators in CVRD (Census of Agriculture 2001 and 2006)

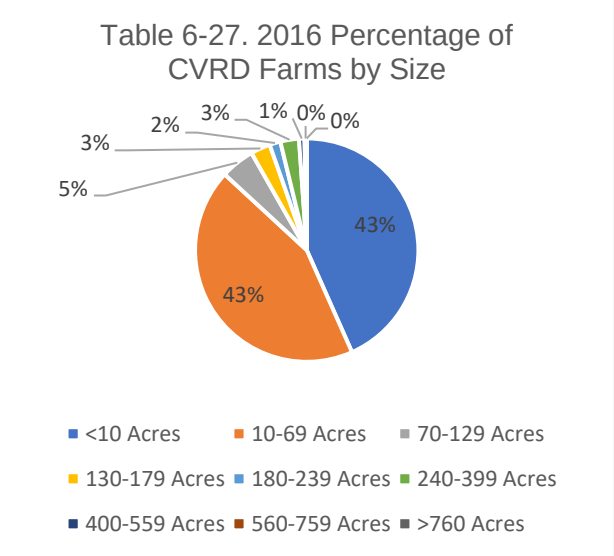


23. Size of CVRD farms

- Farms generally have a minimum size for feasibility of different types and this indicator shows % that are probably viable long term for major food production and informs subdivision policy.

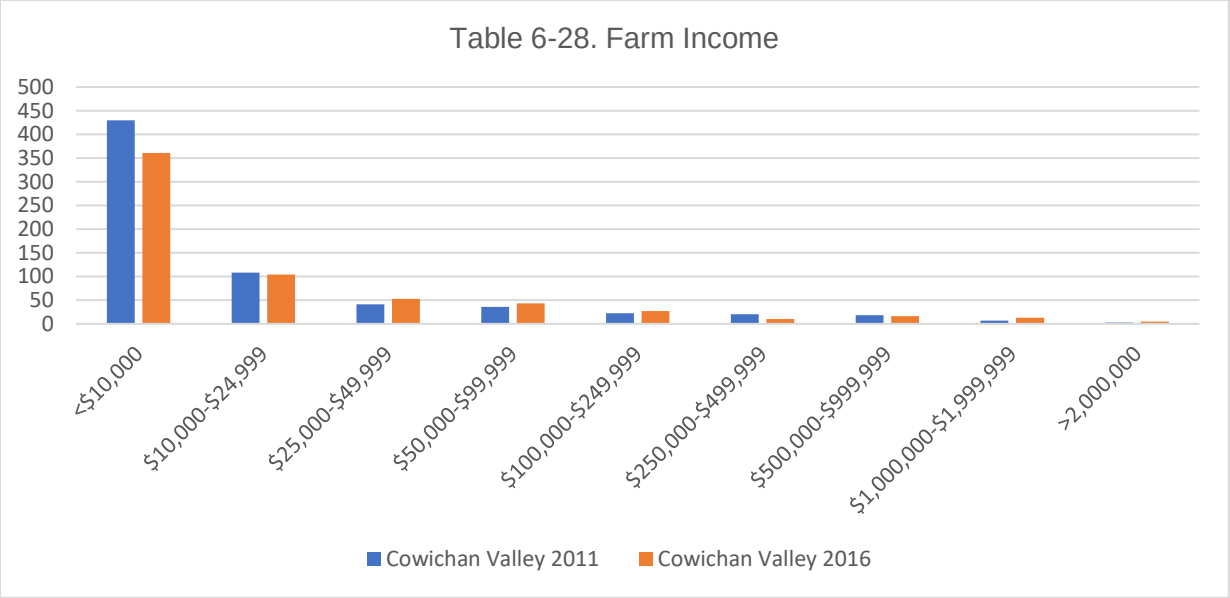
- Number of farms by size in 2011 and 2016 (Statistics Canada, 2016a)





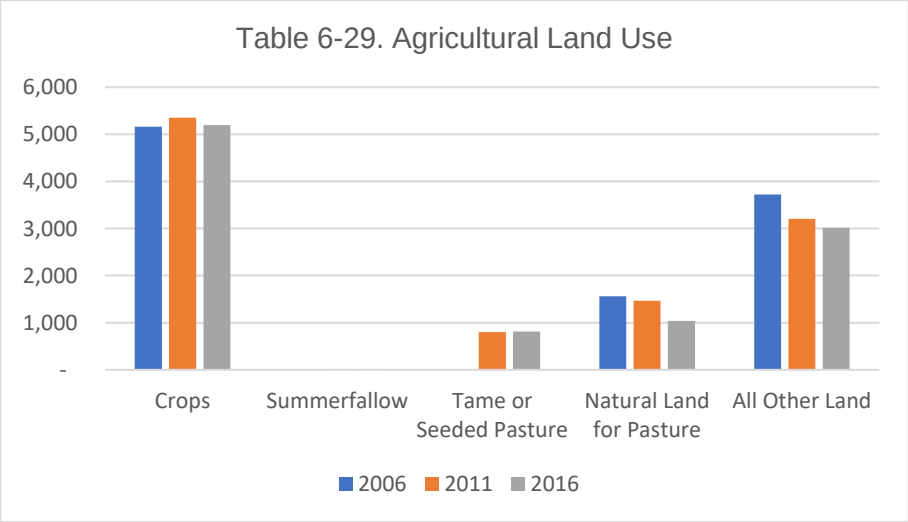
24. Income receipts for farms

- This indicator shows what percentage of farms are viable businesses and how many are hobby farms.
- CVRD farms classified by gross farm receipts (Statistics Canada, 2016b)



25. Land in food production

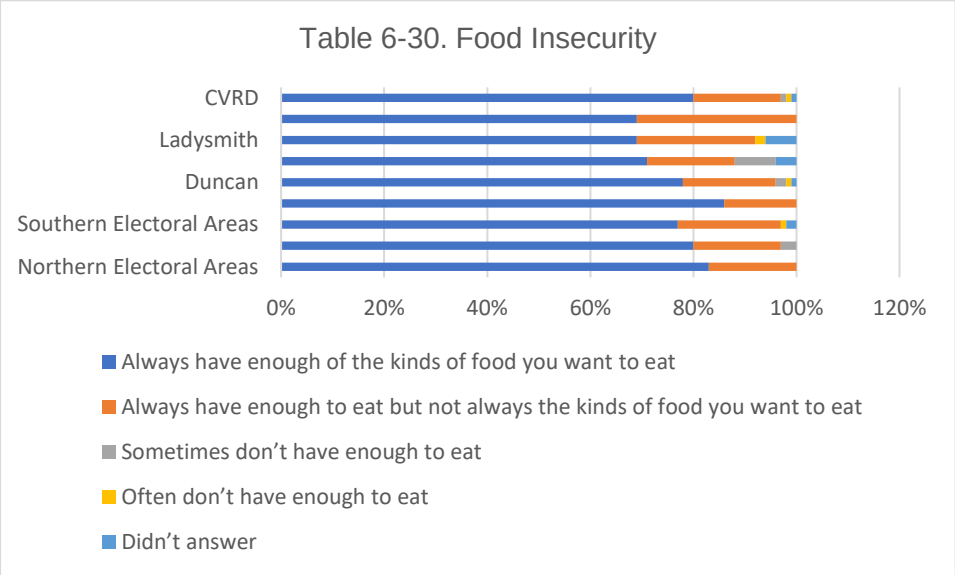
- This indicator shows the level of actual production of food in the region, as well as likely improvements to existing agricultural lands.



- Hectares of land in food production and breakdown of crop area for different crops in 2006, 2011 and 2016 (Agriculture in Brief: Cowichan Valley Regional District, 2016, p. 1)
- Primary agriculture activity on CVRD agricultural lands (Agriculture Water Demand Model: Report for the Cowichan Valley Regional District, 2013, p. 27)

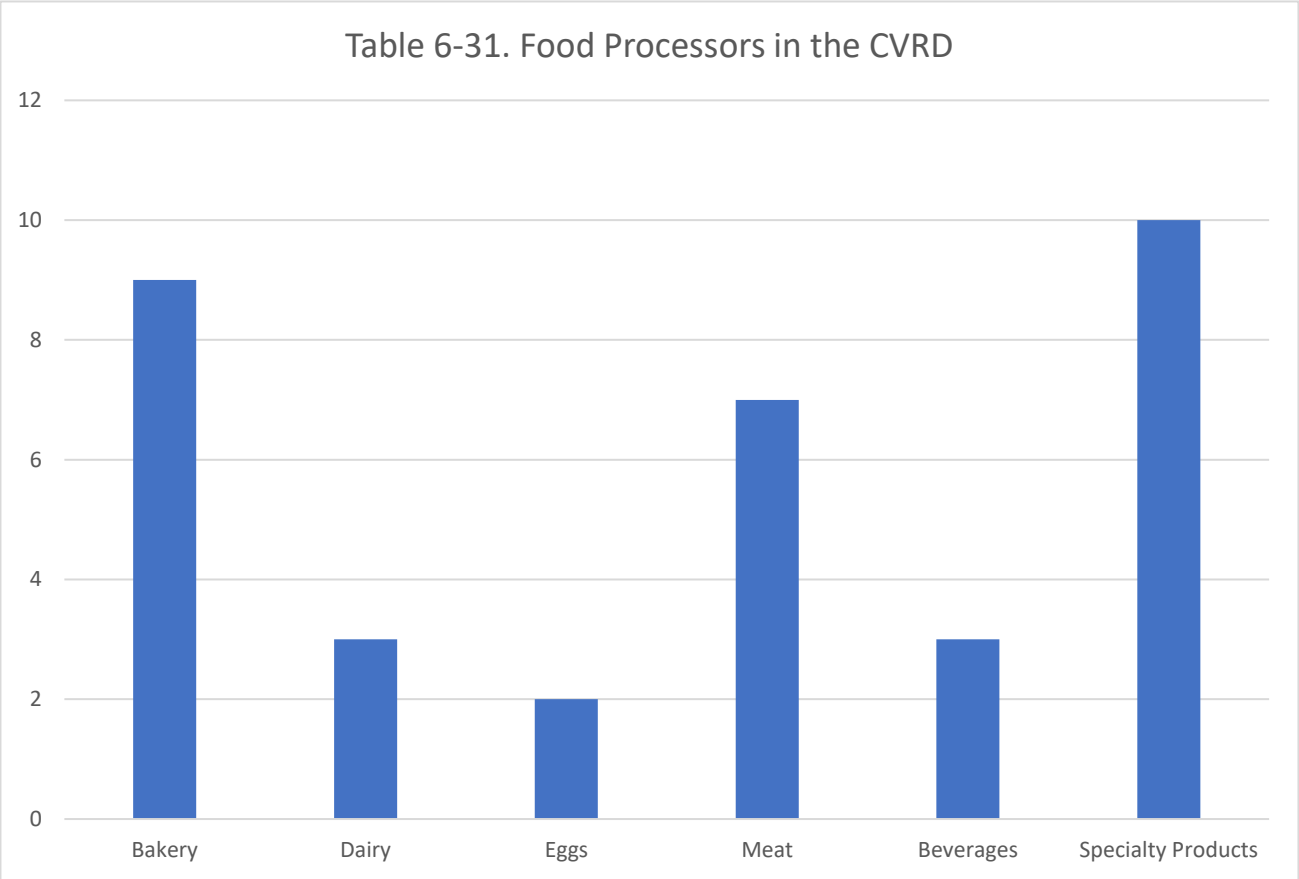
26. Food insecurity

- This indicator shows what % of the CVRD population experiences food insecurity



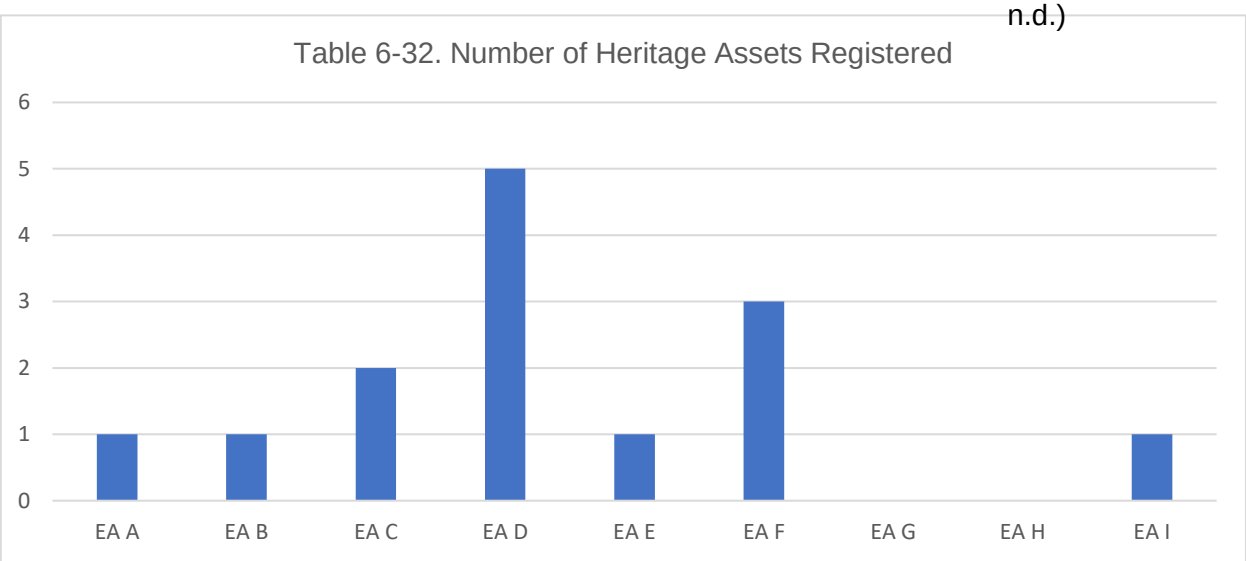
- Percent distribution of food insecurity (Cowichan Communities Health Profile, 2014, p. 57)

27. Food processing	• This indicator shows the potential and ability for local food production which may contribute to strengthening the region's food systems.	• Processors in CVRD by location and type (Creating Climate Change Resilience: Enhancing Food Processing in the CVRD, 2014, Appendix B) • Class A Abattoirs in or near CVRD (Creating Climate Change Resilience: Enhancing Food Processing in the CVRD, 2014, p. 7)



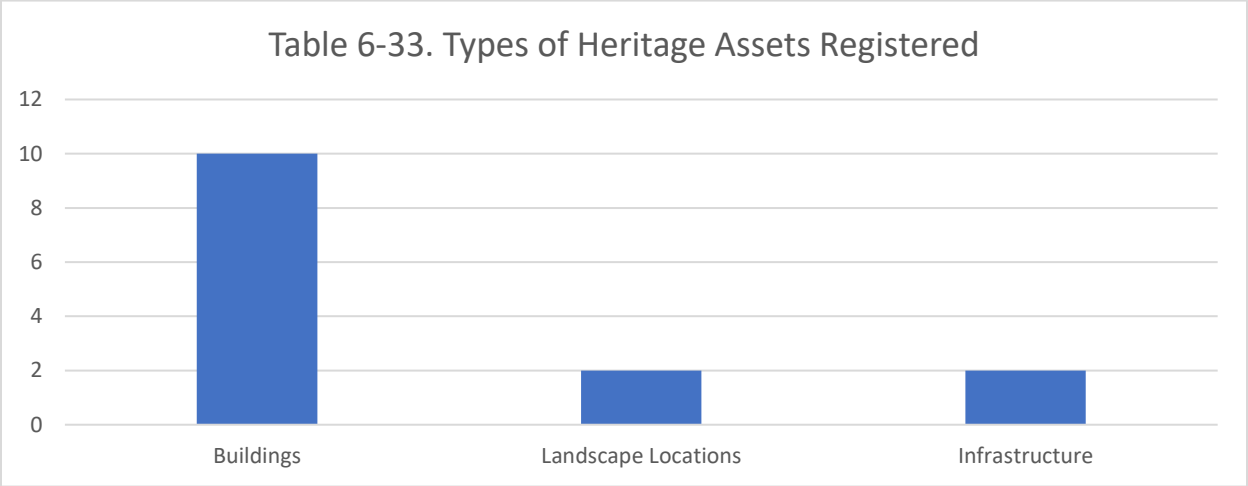
Objective: Support heritage, arts and culture

Indicator	Rationale	Data accessibility
28. Heritage assets registered by electoral area	• This indicator shows the extent of the heritage register across the region.	• Listing of properties on community heritage register by electoral area (Cowichan Valley Regional District, n.d.)



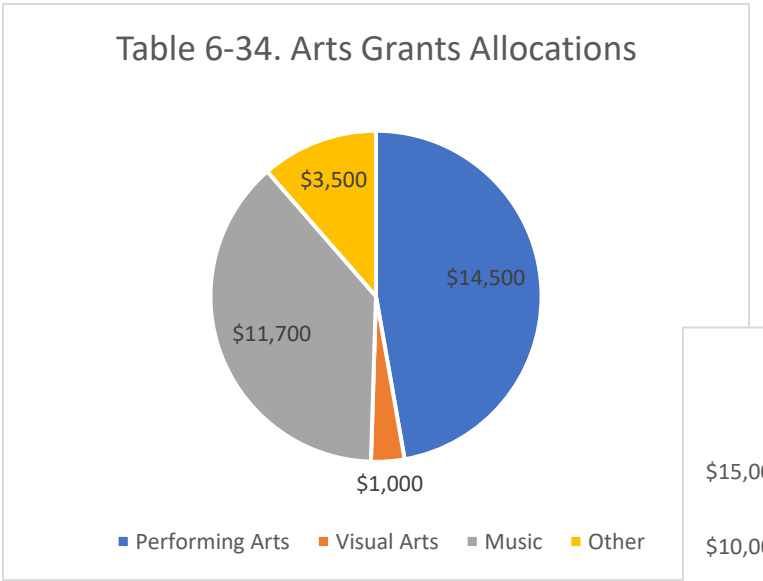
29. Types of assets registered

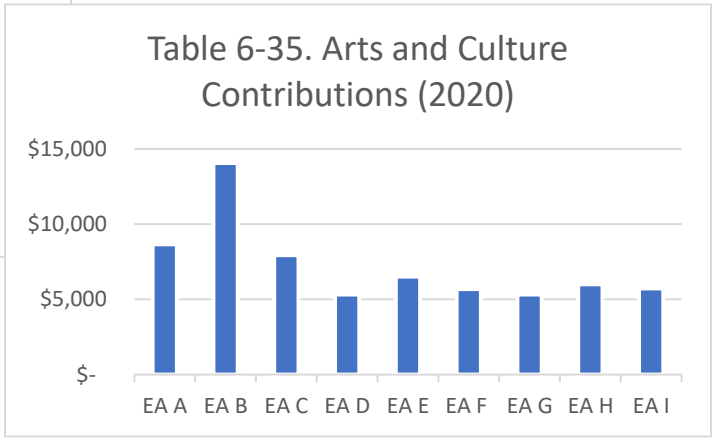
- This indicator shows the relative priorities of registration across different heritage assets. Additional assets can be added in the future.
- Listing of properties on community heritage register (Cowichan Valley Regional District, n.d.)



30. Arts grants allocations

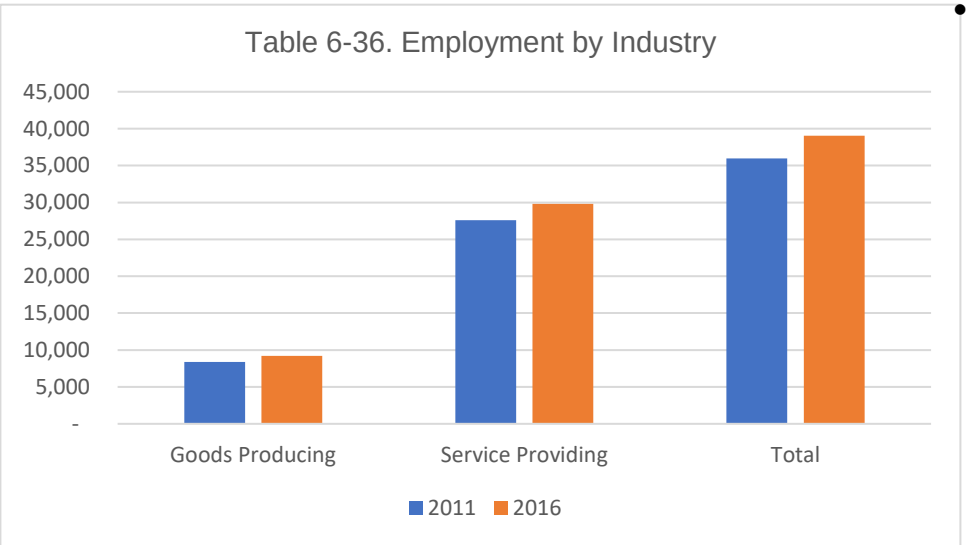
- This indicator shows priorities for arts investments.
- Arts and culture grants awarded in 2019 (Minutes of the Arts & Culture Grant Disbursement Committee, 2019)

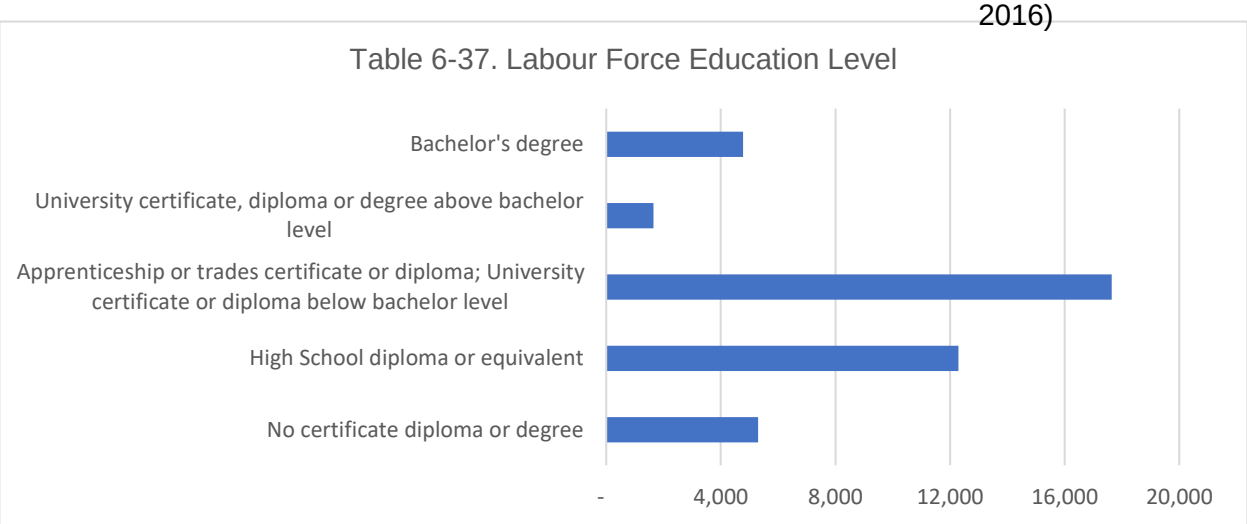




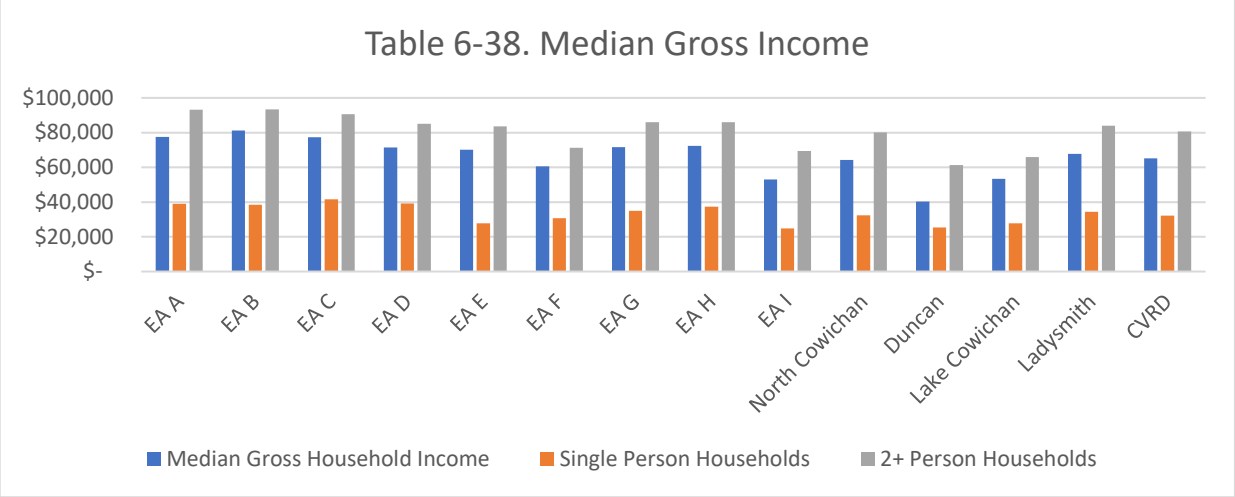
Objective: Realize the region's economic potential

Indicator	Rationale	Data accessibility
31. Employment by industry and change over time	• This indicator shows change over time in the key industries – which informs land use decisions and economic development strategies.	• Labour force in 2011 and 2016 (Industrial Land Use Strategy, 2019, p. 16) • Employment by industry (Long range projections of population, housing and employment in the Cowichan Valley Regional District, 2019, p. 19)
32. Labour force education level	• This indicator shows the labour capital available for market growth and investment.	• Workforce education attainment (Investing in BC's Cowichan Valley Regional District, 2016)

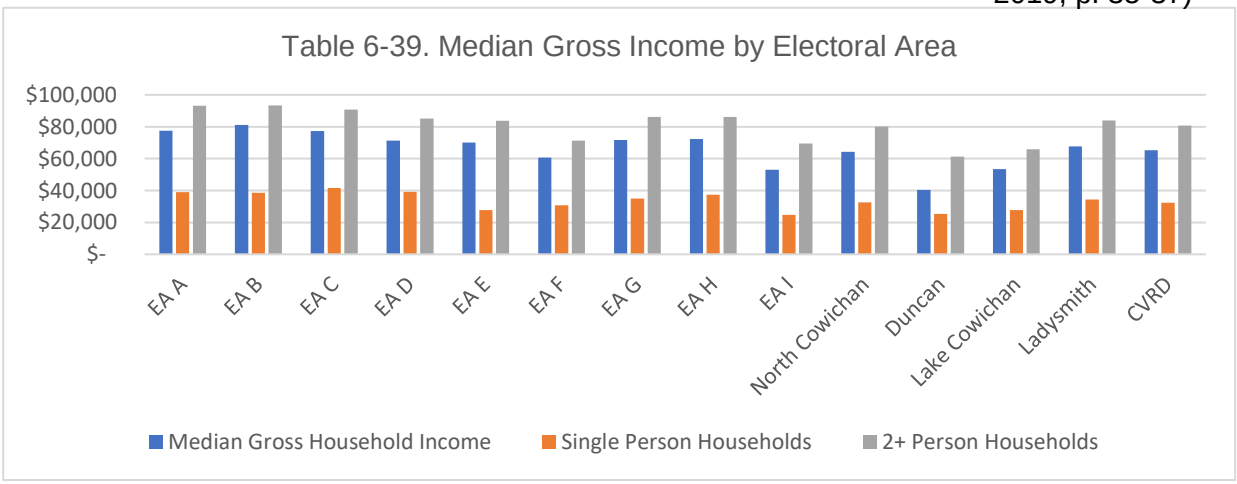




33. Median and gross incomes	• This indicator shows the essential economic condition of the region and speaks to housing affordability.	• Median household income (Long range projections of population, housing and employment in the Cowichan Valley Regional District, 2019, p. 35-37)



34. Distribution of household income in electoral areas	• This indicator shows the relative incomes of electoral areas and informs where various types of housing needs to be planned for.	• Median household income (Long range projections of population, housing and employment in the Cowichan Valley Regional District, 2019, p. 35-37)

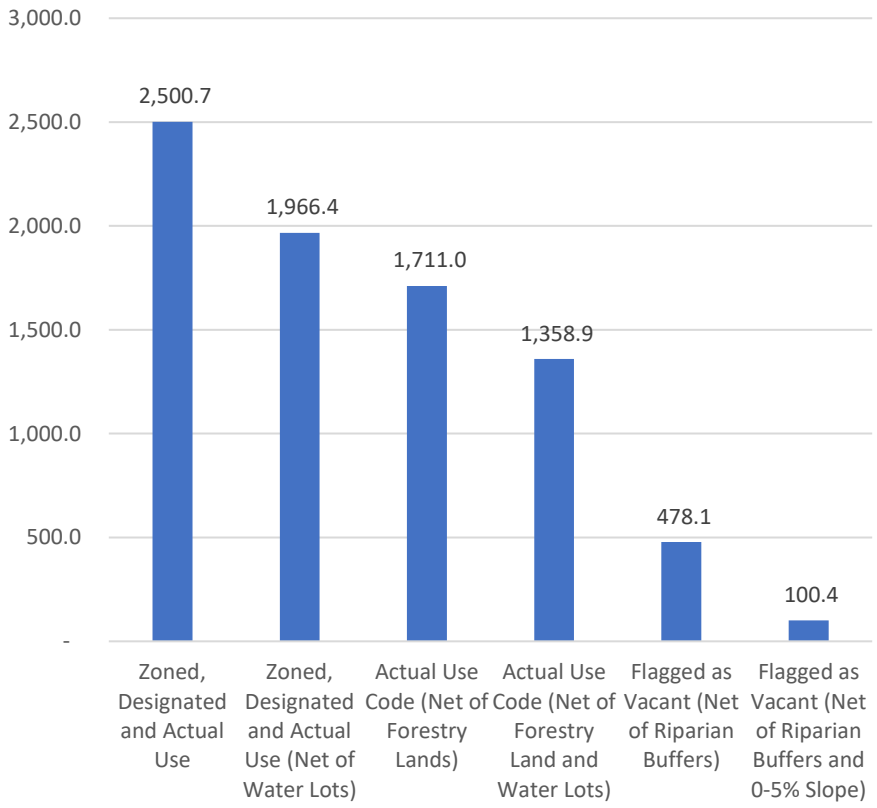


35. Industrially-designated land available

- This indicator shows how much industrial land is available in the region and electoral areas now – and how much is available for development to inform land use planning.

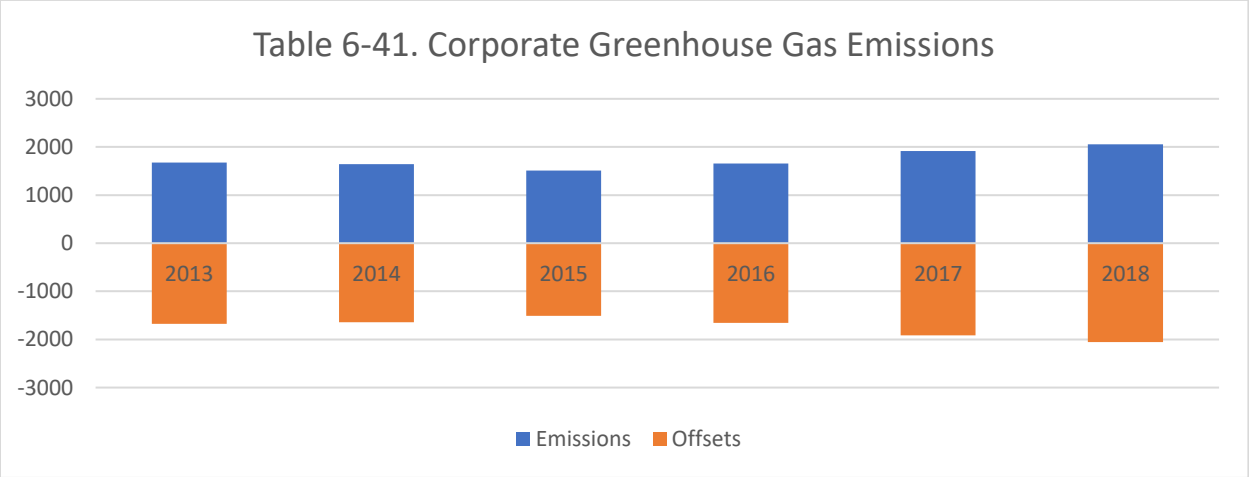
- Percent and hectares of land zoned as or designated for industrial use (Industrial Land Use Strategy, 2019, p. 24)
- Percent and hectares of land zoned, designated or actually used for industrial use (Industrial Land Use Strategy, 2019, p. 25)
- Hectares of industrial land by electoral area (Industrial Land Use Strategy, 2019, p. 27)
- Vacant industrial land with less than 5% (Industrial Land Use Strategy, 2019, p. 30)

Table 6-40. Industrial Land Within the CVRD

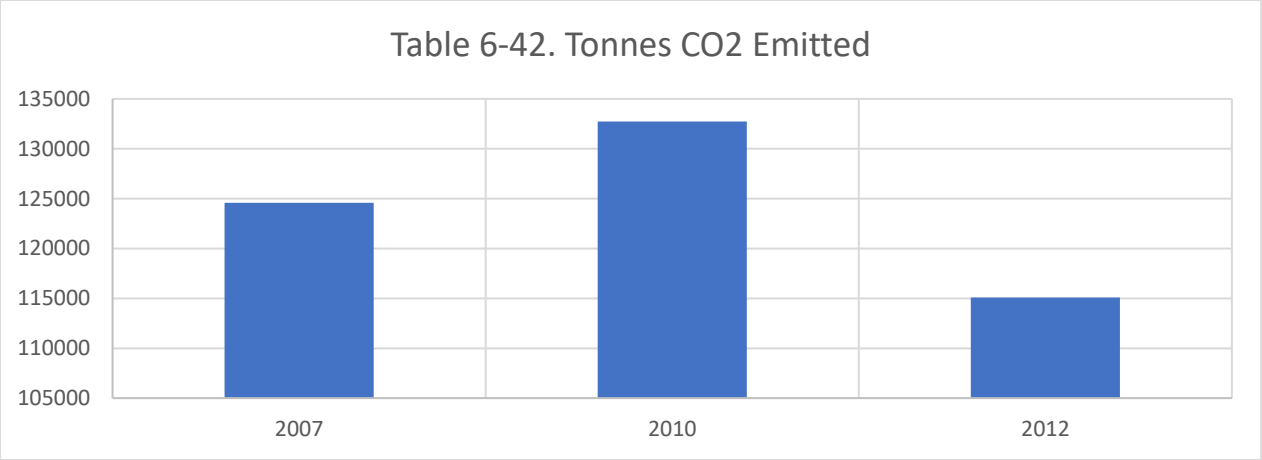


Objective: Mitigate and adapt to climate change

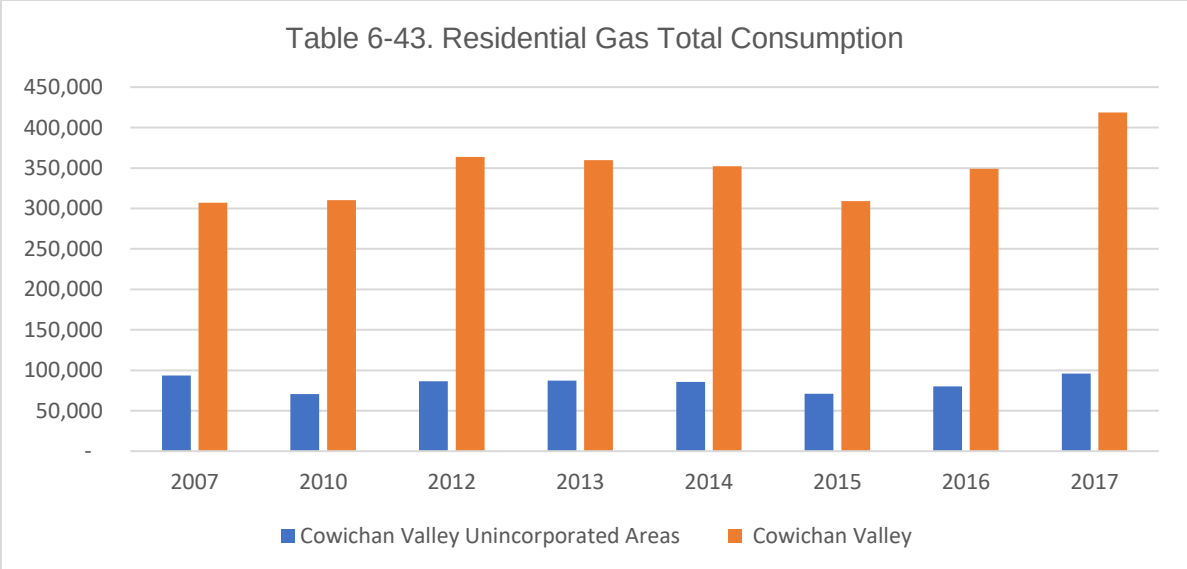
Indicator	Rationale	Data accessibility
36. Corporate GHG emissions	• The CVRD signed the BC Climate Action Charter in 2007 and has committed to climate neutrality for its own operations.	• CO2 emissions and offsets (2018 Climate Action Revenue Incentive Program Public Report, 2019, p. 2) • BC Government 2017 emissions inventory (shows per capita emissions dropping between 2012-2017).

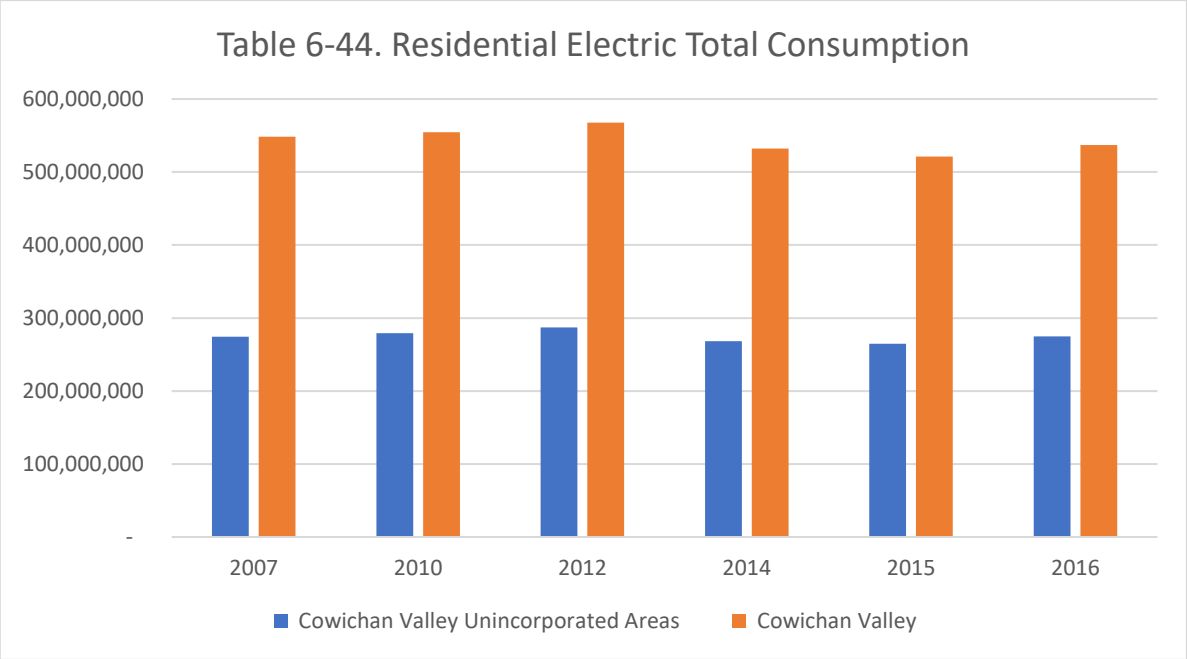


37. Community energy and emission inventories	• GHG emissions involve many inputs and the provincial government provided these inventories for several years in the past 15. The CEEI program has since ceased so current CEEI data is not available.	• (Climate Mitigation, n.d.)



38. Utilities energy data	• The energy emitted from energy consumption is a key indicator and can be used as a proxy for building emissions.	• (Provincial Greenhouse Gas Emissions Inventory)





39. Solid waste emissions	• Solids waste is a small but important element of a community's emissions.	• ([Provincial Greenhouse Gas Emissions Inventory])