

# Sustainable Development Goals Scorecard

## Comox

### Introduction

The UN Sustainable Development Goals (SDGs) are a set of seventeen interconnected and universal goals agreed upon by the international community and adopted by Canada. The goals reflect an aspirational vision for inclusive development, environmental protection, partnership, peace and security around the world. In BC, a mosaic of civil society groups, local government and engaged individuals are working for sustainable development in their communities everyday. The BC 2030 Campaign seeks to better coordinate these efforts by aligning the global SDG agenda with local issues and challenges. To this end, the BCCIC team created a series of Scorecards for various BC communities in anticipation of the BC Provincial elections, aligning communities' achievements with the goals set out by the UN in order to highlight the accomplishments made by each community as well as ongoing challenges.

### Comox and the SDGs

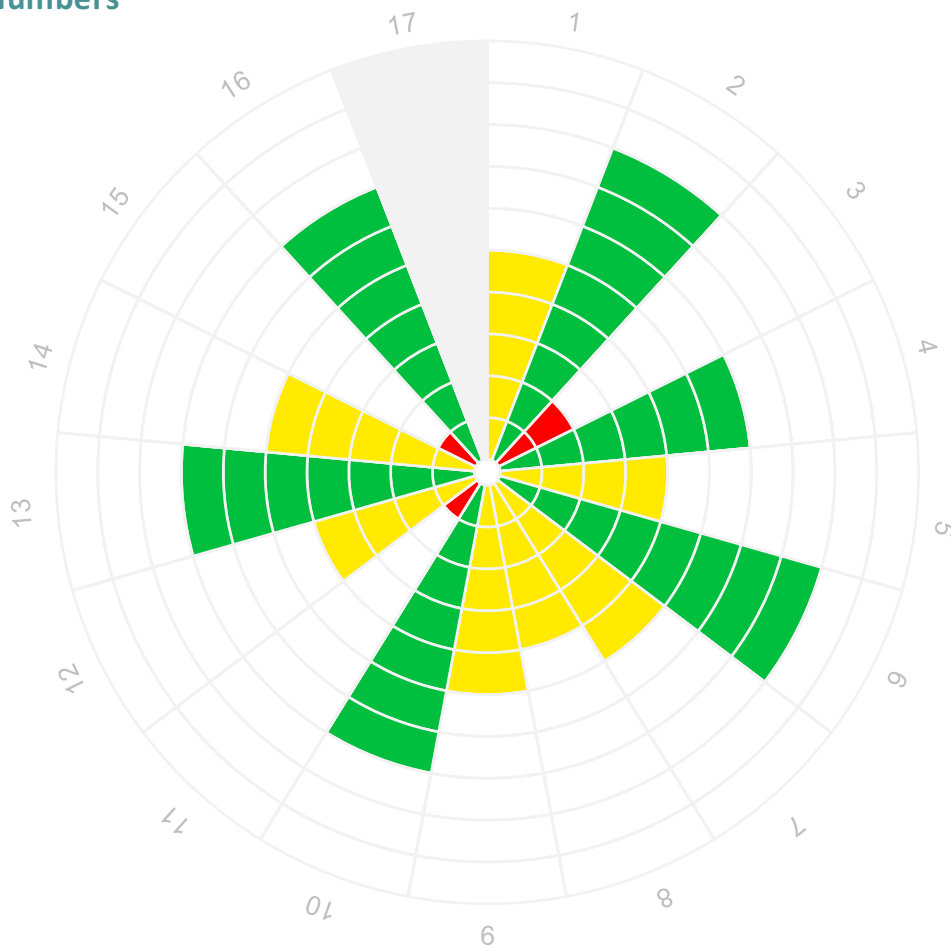
In a series of Round Tables, community members in Comox identified salmon fishing, water environments and marine ecosystems to be the greatest priorities and key areas of opportunity. The following report presents a snapshot of Comox's progress towards attaining each UN SDG, providing both an overall progress score on sustainable development along with scores for each indicator. For more detailed information on individual and composite indicators, please see appendix.



## Dashboard



## Your Score in Numbers



## Methodology

*Selecting Data:* To select statistical data indicators from which aggregate scores could be derived, we first consulted the official UN list of SDG indicators in conjunction with regional data. Selecting available and reliable data from local health areas, school districts, agricultural land reserves and municipalities, we chose data that directly mimicked or was substitutable for UN SDG official indicators. We drew heavily from municipal data stores and provincial databases such as the Community Energy and Emissions Inventory, Socioeconomic Profiles, Community Health Atlas, and school district reports (for a full list of references see Works Cited).

*Calculating Scores:* Corresponding to the UN's official scoring methodology as well as recognizing the lived impracticality of currently attaining some of the targeted ideals, we used a relative, rank-based approach, comparing each community to the empirical data range between the highest and lowest scores in the province. To avoid skewing the ranges, we omitted extreme outliers from our calculations, these exclusions noted throughout the report where applicable. However, because outliers often indicate exceptionally poor performance on important indicators, it is advised to note the outlying community for the purposes of research and considering policy alternatives to further development.

Deriving each community's numerical score within these relative bounds, we normalized scores between 0 and 10, 10 representing the highest performing community's achievement and 0 representing the community with the poorest performance. Each community of focus's score was normalized between these values, reflecting its relative performance within the context of BC. Aggregating individual indicator scores into a composite goal and overall achievement indicator, we calculated a basic mean across all used indicators. For an example calculation, see below.

Exceptions to this method were made for indicators for which Canada and the global community has clear safety indications (e.g. for water turbidity and PM2.5), in these cases scores were dependent upon the boundaries of established health and safety guidelines, which were used to normalize community data. Exceptions are indicated as footnotes throughout the following report.

*Classification and Visualization:* Dividing the normalized range (0-10) into equal interval classes, we established three progressive categories: poor (0-3.3), average (3.4-6.7), good (6.8-10). Each category is symbolized by the color red (poor), yellow (average), or green (good) in the overall, aggregate speedometer, the goal-based dashboard and graphic, and in each of the individualized indicator bar graphs. The needle on the speedometer points to the range where the central tendency score falls. Goals where data were not available or applicable to the community's specific context are represented in grey.

## Example Calculation – After-Tax Total Median Household Income:

Highest Performing Community: North Vancouver-Seymour - \$66,601  
 Poorest Performing Community: Victoria Beacon-Hill - \$33,803  
 Community of Focus: Comox - \$42,952

### Relative Attainment –

*Value – lowest performing Community*

|                               |                                    |             |
|-------------------------------|------------------------------------|-------------|
| Highest Performing Community: | North Vancouver-Seymour - \$66,601 | -- \$32,798 |
| Poorest Performing Community: | Victoria Beacon-Hill - \$33,803    | -- \$0      |
| Community of Focus:           | Comox - \$42,952                   | -- \$9,149  |

*Normalize* – Set high equal to 10 and low equal to 0

$$\frac{\text{Value}}{\text{Highest Value}} \times 10$$

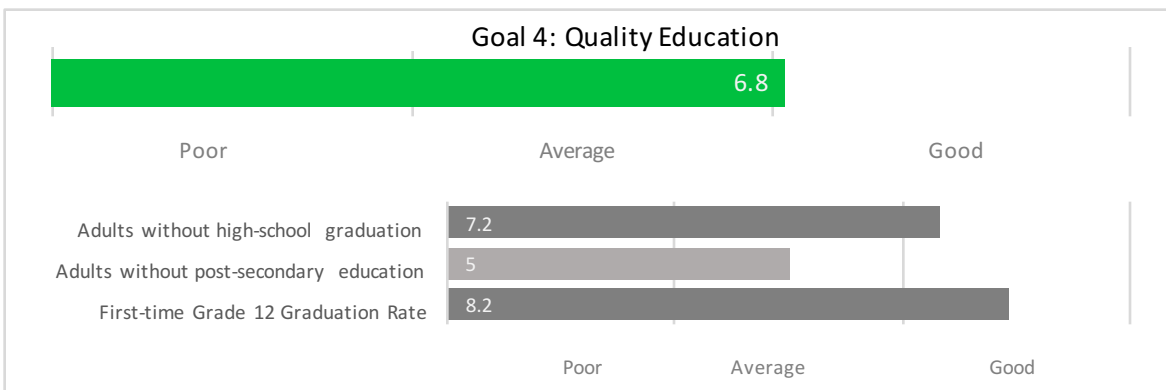
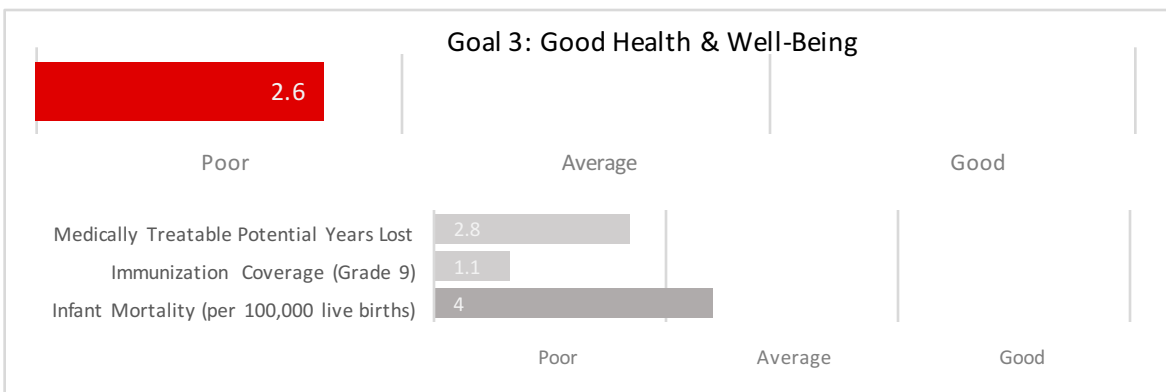
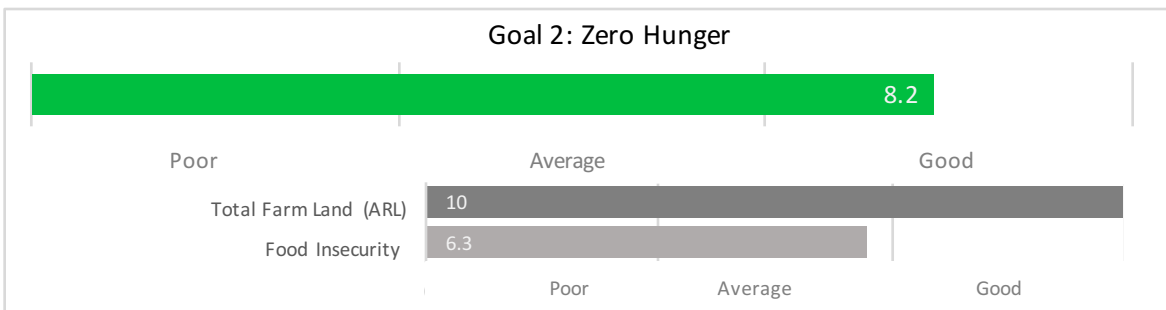
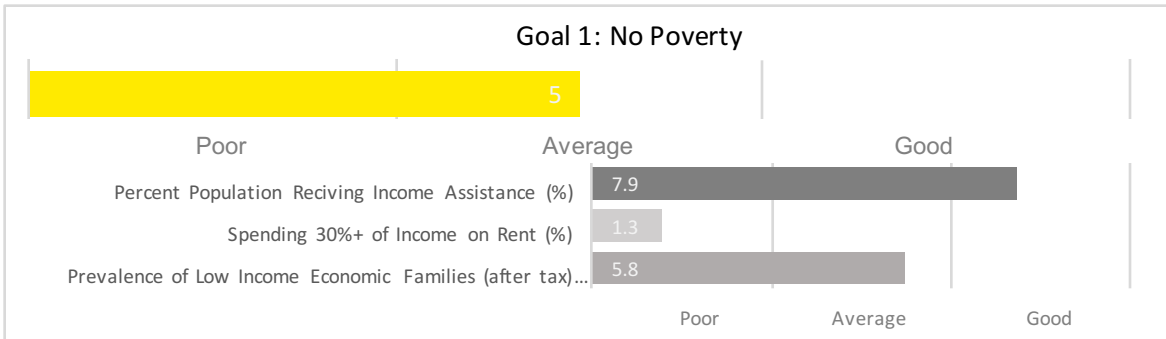
|                               |                                    |               |
|-------------------------------|------------------------------------|---------------|
| Highest Performing Community: | North Vancouver-Seymour - \$32,798 | -- 10         |
| Poorest Performing Community: | Victoria Beacon-Hill - \$0         | -- 0          |
| Community of Focus:           | Comox - \$9,149                    | -- 2.8 (Poor) |

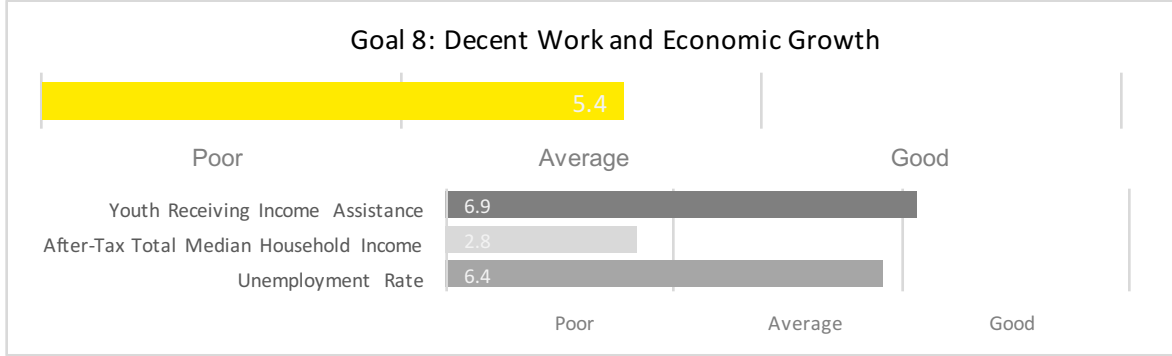
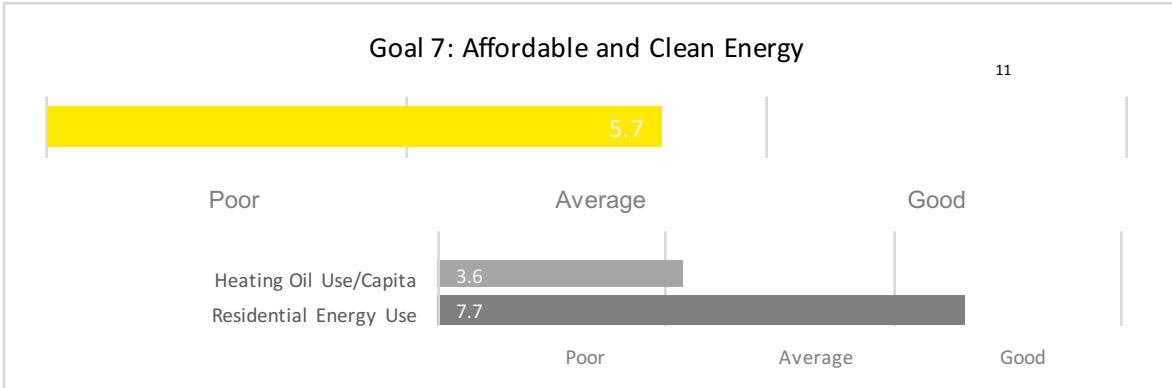
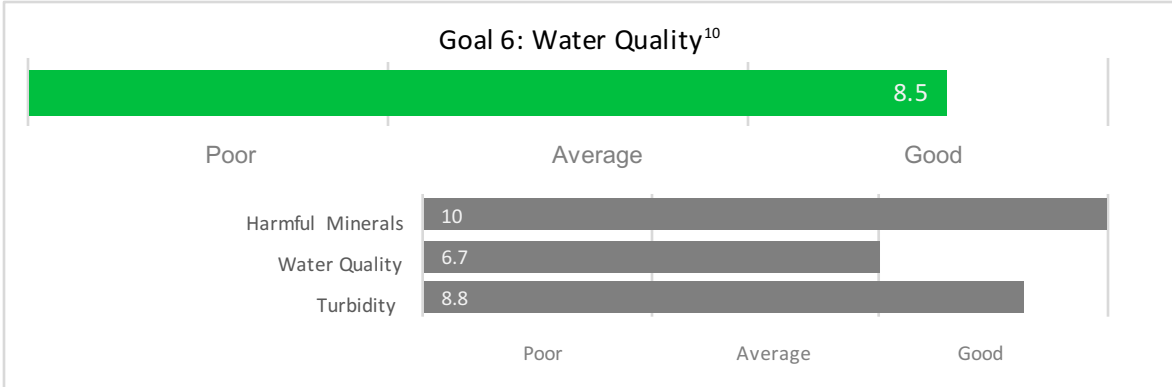
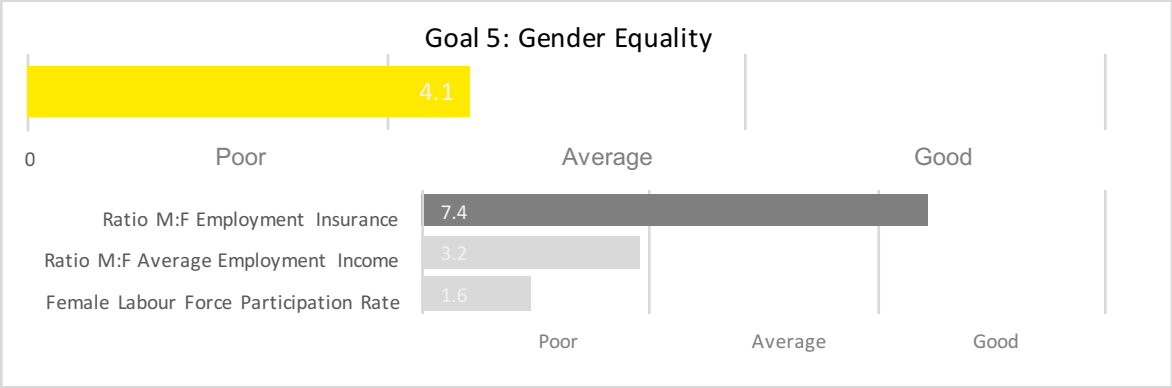
## Methodological Limitations

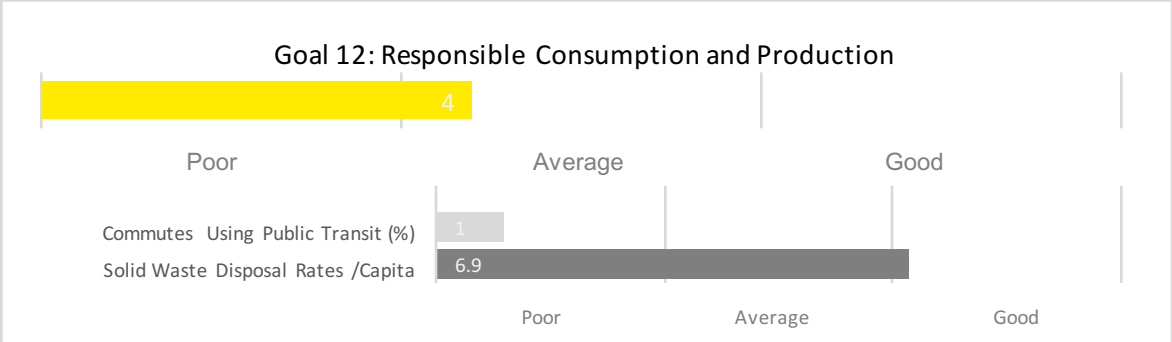
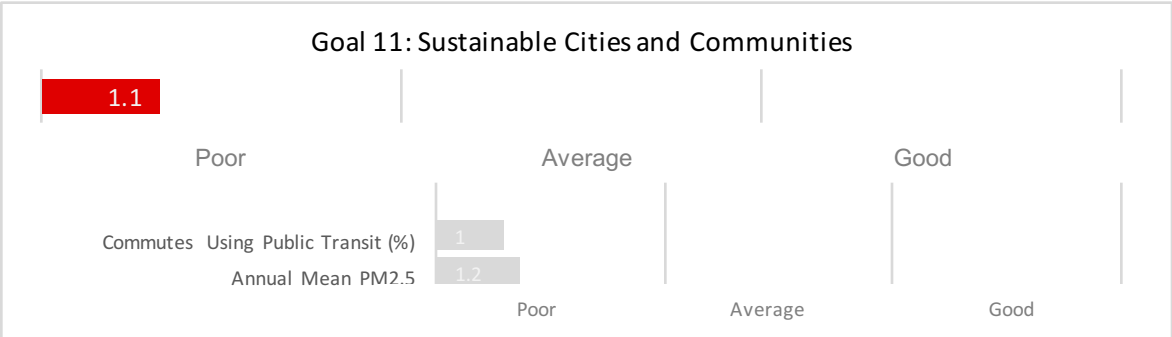
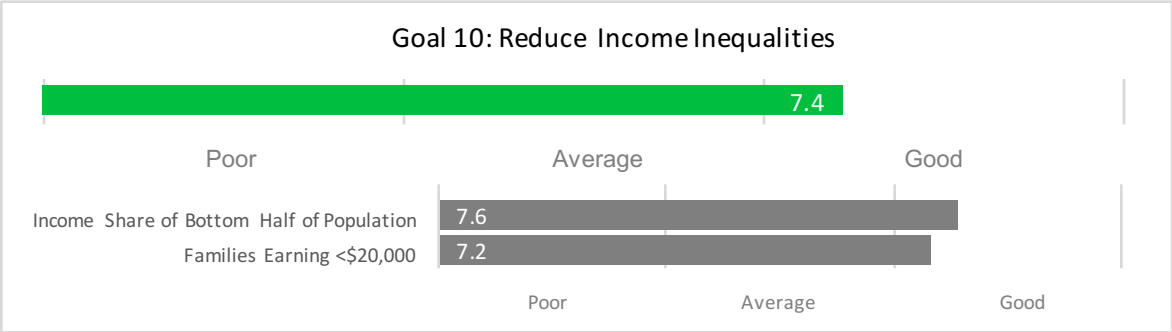
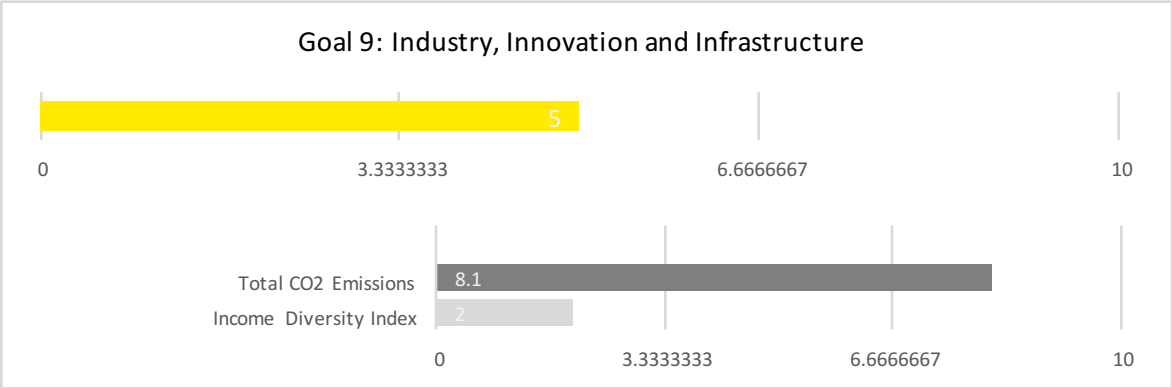
The SDG Scorecard project is the first of its kind to be completed across various communities in BC, and as such it continues to evolve. We decided upon a computational methodology that we believe best reflects each community's current progress towards achieving the SDGs. However, there are several methodological limitations to take into account when assessing the results of our research.

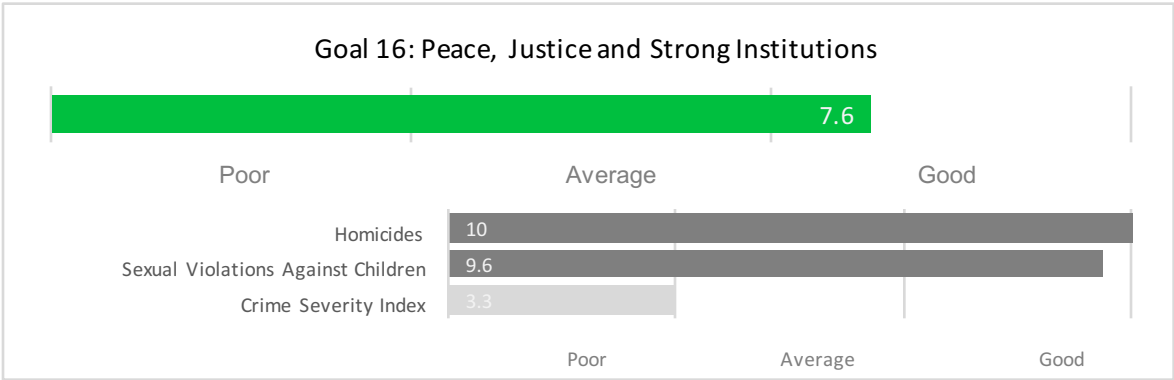
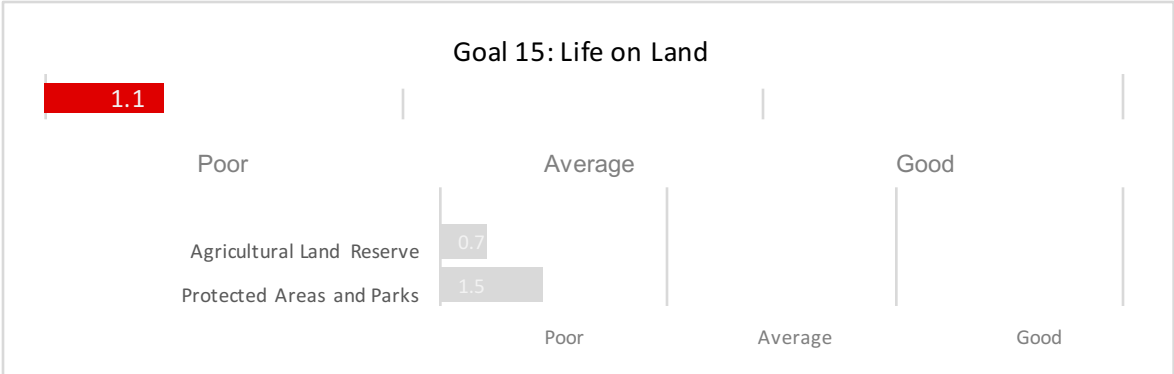
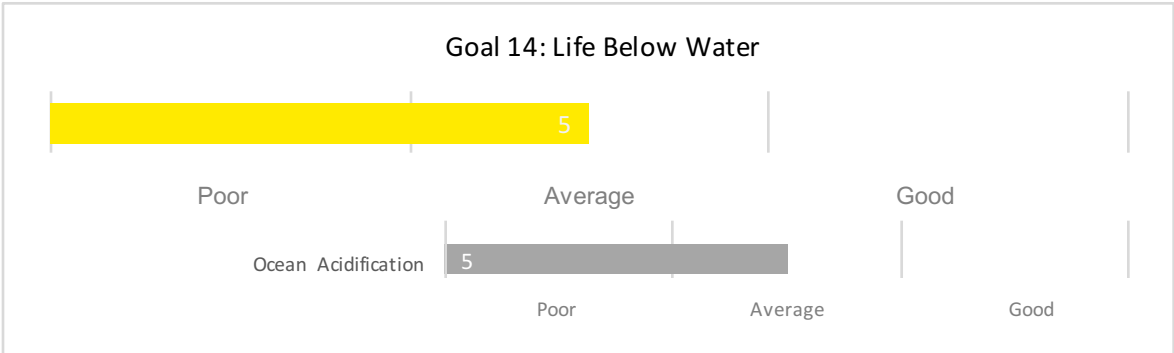
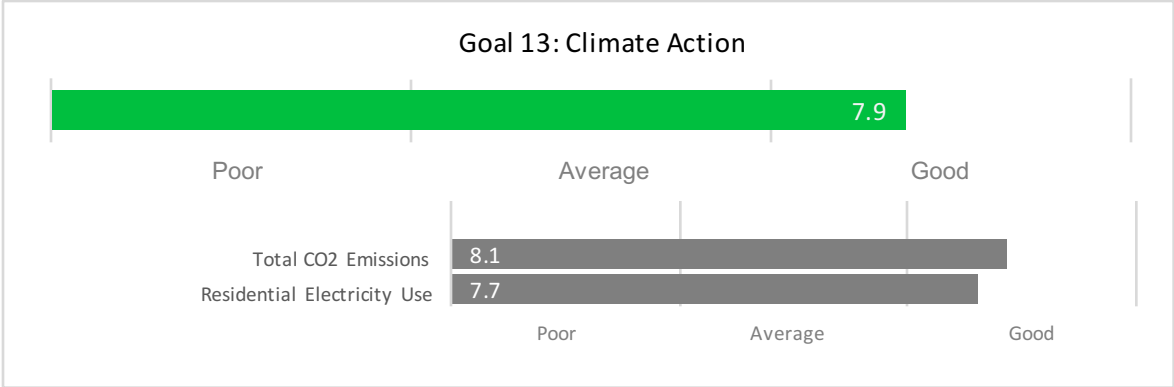
We were unable to incorporate all the official UN indicators for each goal into our research due to a lack of data from municipal, provincial or national databases. It is important to note that most of the available data were compiled between the years 2010-2015, and communities have likely progressed or regressed on the relevant indicators since then. We did not use data compiled prior to 2005.

Additionally, in the process of aggregating scores for an individual goal across its multiple indicators, an exceptional or good performance on certain indicators may mask poor performance on other indicators. The resulting average on the final score for the Goal in the community may be affected by this bias. For individual scores on each indicator, please see the appendix.











## Works Cited:

### Goal 1: No Poverty

1. Prevalence of low-income persons (By Local Health Area 71): "Socioeconomic Profiles". *BCStats*. <http://www.bcstats.gov.bc.ca/apps/SocioEconomicProfiles.aspx>. 2012.
2. Spending 30% or more of income on rent: "Canadian Rental Housing Index". *Canadian Rental Housing Index*. <http://rentalhousingindex.ca/#>. 2011.
3. Population receiving income assistance (By Local Health Area 71): "Socioeconomic Profiles". *BCStats*. <http://www.bcstats.gov.bc.ca/apps/SocioEconomicProfiles.aspx>. 2012.

### Goal 2: Zero Hunger

1. Food Insecurity: "Household Food Insecurity in 2011-2012". *Interior Health British Columbia*. [http://www.phsa.ca/population-public-health-site/Documents/Household%20food%20insecurity%20in%20BC\\_Interior%20infographic.pdf](http://www.phsa.ca/population-public-health-site/Documents/Household%20food%20insecurity%20in%20BC_Interior%20infographic.pdf). 2011-2012.
2. Total Farm Land (Agricultural Land Reserve): "Land Use and greenspace" (Total of Provincial Parks, Local Parks + ARL). *BC Emissions*. <https://www.bcemissions.ca/go/town/Comox/index.html#landuse>. 2009 (Using data from 2006-2009).

### Goal 3: Good Health & Well Being

1. Medically Treatable Potential Years Lost: "BC Community Health Atlas". Theme: Health, Indicator Name: Medically Treatable Potential Years Lost, Time period: 2006. *BCStats*. <http://maps.gov.bc.ca/ess/hm/cha/>. 2006.
2. Immunization Coverage (Grade 9): "Immunization Uptake in Grade 9 Students 2002-2015". *BC Centre for Disease Control*. [http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/Immunization/Coverage/Grade9\\_Coverage\\_Results.pdf](http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/Immunization/Coverage/Grade9_Coverage_Results.pdf). 2015.
3. Infant Mortality: "BC Community Health Atlas". Theme: Health, Indicator Name: Infant Mortality, Time period: 2006. *BCStats*. <http://maps.gov.bc.ca/ess/hm/cha/>. 2006.

### Goal 4: Quality Education

1. Adults without high-school graduation: "District Reports": Comox Valley: 71. *BC Ministry of Education*. <https://www.bced.gov.bc.ca/reporting/district.php>. 2015-2016.
2. Adults without post-secondary education: "Socioeconomic Profiles". Region type: School District 71 Comox Valley. *BCStats*. <http://www.bcstats.gov.bc.ca/apps/SocioEconomicProfiles.aspx>. 2012.
3. First-time Grade 12 Graduation Rate: "District Reports": Comox Valley: 71. *BC Ministry of Education*. <https://www.bced.gov.bc.ca/reporting/district.php>. 2015-2016.

### Goal 5: Gender Equality

1. Ratio Male: Female Employment Insurance (by Provincial Electoral Districts): "Socioeconomic Profiles", Comox Valley. *BCStats*. <http://www.bcstats.gov.bc.ca/StatisticsBySubject/Census/2006Census/ProvincialElectoralDistricts.aspx>. 2006.
2. Ratio Male: Female Average Employment Income (by Local Health Area 71): "Socioeconomic Profiles", Comox Valley. *BCStats*. <http://www.bcstats.gov.bc.ca/apps/SocioEconomicProfiles.aspx>. 2012.
3. Female Labour Force Participation Rate: (by Local Health Area 71): "Socioeconomic Profiles", Comox Valley. *BCStats*. <http://www.bcstats.gov.bc.ca/apps/SocioEconomicProfiles.aspx>. 2012.

### Goal 6: Water Quality

1. Harmful Minerals: "Analytical Report". *Exova*. [http://www.comoxvalleyrd.ca/assets/Department/Documents/W\\_CV\\_WQR.pdf](http://www.comoxvalleyrd.ca/assets/Department/Documents/W_CV_WQR.pdf). 2016.
2. Water Quality: "Interactive Indicator Maps". Theme: Water, Indicator: Quality, BC, \_\_\_\_\_. <http://maps-cartes.ec.gc.ca/indicators-indicateurs/default.aspx?mapId=3&lang=en>. 2010-2012.
3. Turbidity: "Analytical Report". *Exova*. [http://www.comoxvalleyrd.ca/assets/Department/Documents/W\\_CV\\_WQR.pdf](http://www.comoxvalleyrd.ca/assets/Department/Documents/W_CV_WQR.pdf). 2016.

### Goal 7: Affordable and Clean Energy

1. Heating Oil Use/Capita: "Community Energy & Emissions Inventory". Key Data and Reports: Full CEEI (2012). *Environmental Protection & Sustainability*. 2012.
2. Residential Energy Use (kWh/person): "Heating and electricity" (Residential Electricity Use). *BC Emissions*. [https://www.bcemissions.ca/go/town/Comox/index.html#heating\\_electricity](https://www.bcemissions.ca/go/town/Comox/index.html#heating_electricity). 2009 (Using data from 2006-2009).

### Goal 8: Decent Work & Economic Growth

1. Percentage of youth 15-24 receiving income assistance who are employable: (by Local Health Area 71): "Socioeconomic Profiles", Comox Valley. *BCStats*. <http://www.bcstats.gov.bc.ca/apps/SocioEconomicProfiles.aspx>. 2012.
2. After-tax median household income (by Provincial Electoral District): "Socioeconomic Profiles", Comox Valley. *BCStats*. <http://www.bcstats.gov.bc.ca/StatisticsBySubject/Census/2006Census/ProvincialElectoralDistricts.aspx>. 2006.
3. Unemployment Rate: (by Local Health Area 71): "Socioeconomic Profiles", Comox Valley. *BCStats*. <http://www.bcstats.gov.bc.ca/apps/SocioEconomicProfiles.aspx>. 2012.

### Goal 9: Industry, Innovation & Infrastructure

1. Income Diversity Index: "Gender, dependency and income diversity". BC Atlas of Wellness. [http://www.geog.uvic.ca/wellness/wellness/5\\_1\\_GenDeplnc.pdf](http://www.geog.uvic.ca/wellness/wellness/5_1_GenDeplnc.pdf).
2. Total CO2 Emissions: "Community Energy & Emissions Inventory". Key Data and Reports: Full CEEI (2012). *Environmental Protection & Sustainability*. 2012.  
\*Note: In the CEEI Excel Spreadsheet, carbon emissions were compared via regional districts and totaled using the CO2E (t) column, and divided by the population of the 1E+06 column. 2E+06 was not used in addition to 1E+06 because it uses unincorporated areas in 1E+06 to count a separate measure, so they were not used together to avoid double counting.

### Goal 10: Reduce Income Inequalities

1. Income Share of Bottom Half of Population: (by Local Health Area 71): "Socioeconomic Profiles", Comox Valley. *BCStats*. <http://www.bcstats.gov.bc.ca/apps/SocioEconomicProfiles.aspx>. 2012.
2. Families Earning <\$20,000: (by Local Health Area 71): "Socioeconomic Profiles", Comox Valley. *BCStats*. <http://www.bcstats.gov.bc.ca/apps/SocioEconomicProfiles.aspx>. 2012.

### Goal 11: Sustainable Cities and Communities

1. Commutes Using Public Transit (%): "Commute Mode" (Public Transit System). *BC Emissions*. [https://www.bcemissions.ca/go/town/Comox/index.html#commute\\_mode](https://www.bcemissions.ca/go/town/Comox/index.html#commute_mode). 2009 (Using data from 2006-2009).
2. Annual PM 2.5: "Air". "Air Quality Health Index (AQHI) for Comox Valley." *Environmental Protection & Sustainability*. 2012. [http://www.bcairquality.ca/airsheds/docs/ESSA-Kitimat-Airshed-Report\\_20140425.pdf](http://www.bcairquality.ca/airsheds/docs/ESSA-Kitimat-Airshed-Report_20140425.pdf)

### Goal 12: Responsible Consumption and Production

1. Commuters Using Public Transit (%): "Commute Mode" (Public Transit System). *BC Emissions*. [https://www.bcemissions.ca/go/town/Comox/index.html#commute\\_mode](https://www.bcemissions.ca/go/town/Comox/index.html#commute_mode). 2009 (Using data from 2006-2009)."
2. Solid Waste Disposal Rates/Capita: "Municipal Solid Waste Disposal in B.C. (1990-2015)". 2015 Regional District disposal rates (kg per person). *Sustainability*. <http://www.env.gov.bc.ca/soe/indicators/sustainability/municipal-solid-waste.html>. 2015.

### Goal 13: Climate Action

1. Total CO2 Emissions: "Community Energy & Emissions Inventory". Key Data and Reports: Full CEEI (2012). *Environmental Protection & Sustainability*. 2012. (See Goal 9, Indicator 2 for more details).
2. Residential Electricity Use: "Heating and electricity" (Residential Electricity Use). *BC Emissions*. [https://www.bcemissions.ca/go/town/Comox/index.html#heating\\_electricity](https://www.bcemissions.ca/go/town/Comox/index.html#heating_electricity). 2009 (Using data from 2006-2009).

#### Goal 14: Life Below Water

1. Ocean Acidification: "The Strait Of Georgia Is Turning To Acid, New Research Shows". *Huffington Post British Columbia*. [http://www.huffingtonpost.ca/carol-linnitt/the-strait-of-georgia-turning-to-acid\\_b\\_6084864.html](http://www.huffingtonpost.ca/carol-linnitt/the-strait-of-georgia-turning-to-acid_b_6084864.html). 2014.  
\*Note: As limited information was available for this specific goal, we used this specific indicator found in a local news article to describe the severity of acidity in the Georgia Strait, bordering Comox. As 8.2 is the optimum pH level over the past 300 million years according to National Geographic (<http://ocean.nationalgeographic.com/ocean/explore/pristine-seas/critical-issues-ocean-acidification/>), we standardized as "10" on our customized standard scale. Thus, pH levels falling below 8.2 was considered poorer, since a 0.1 decrease in pH corresponds to a 25% increase in actual level of acidity in the ocean water. The information provided in the news article was by scientist Brian Kingzett at the Vancouver Island University Centre for Shellfish Research. For more information about pH primers, we referred to "PMEL Carbon Program", <https://www.pmel.noaa.gov/co2/story/A+primer+on+pH>.

#### Goal 15: Life on Land

1. Agricultural Land Reserve: "Land Use and greenspace" (Total of Provincial Parks, Local Parks + ARL). *BC Emissions*. <https://www.bcemissions.ca/go/town/Comox/index.html#landuse>. 2009 (Using data from 2006-2009).
2. Protected Areas and Parks: "Land Use and greenspace" (Parks and Protected Areas). *BC Emissions*. <https://www.bcemissions.ca/go/town/Comox/index.html#landuse>. 2009 (Using data from 2006-2009).

#### Goal 16: Peace, Justice and Strong Institutions

1. Homicides (per 100,000 population): "Crimes and Offences". Incident-based crime statistics, by detailed violations and police services, British Columbia, annual (Number), 1998 to 2015. *Statistics Canada*. <http://www5.statcan.gc.ca/cansim/a33?RT=TABLE&themeID=2102&spMode=tables&lang=eng>. 2015.
2. Sexual Violations Against Children (per 100,000 population): "Crimes and Offences". Incident-based crime statistics, by detailed violations and police services, British Columbia, annual (Number), 1998 to 2015. *Statistics Canada*. <http://www5.statcan.gc.ca/cansim/a33?RT=TABLE&themeID=2102&spMode=tables&lang=eng>. 2015.
3. Crime Severity Index: "Crime Severity Index values for 208 police services policing communities over 10,000 population, 2009". *Statistics Canada*. <http://www.statcan.gc.ca/pub/85-002-x/2010002/article/11292/tbl/csivalue-igcvaleurs-eng.htm>. 2009.  
\*Note: "The principle behind the Crime Severity Index was to have more serious crimes carry a higher weight than less serious crimes" ("Designing the Crime Severity Index", <http://www.statcan.gc.ca/pub/85-004-x/2009001/part-partie1-eng.htm>.)