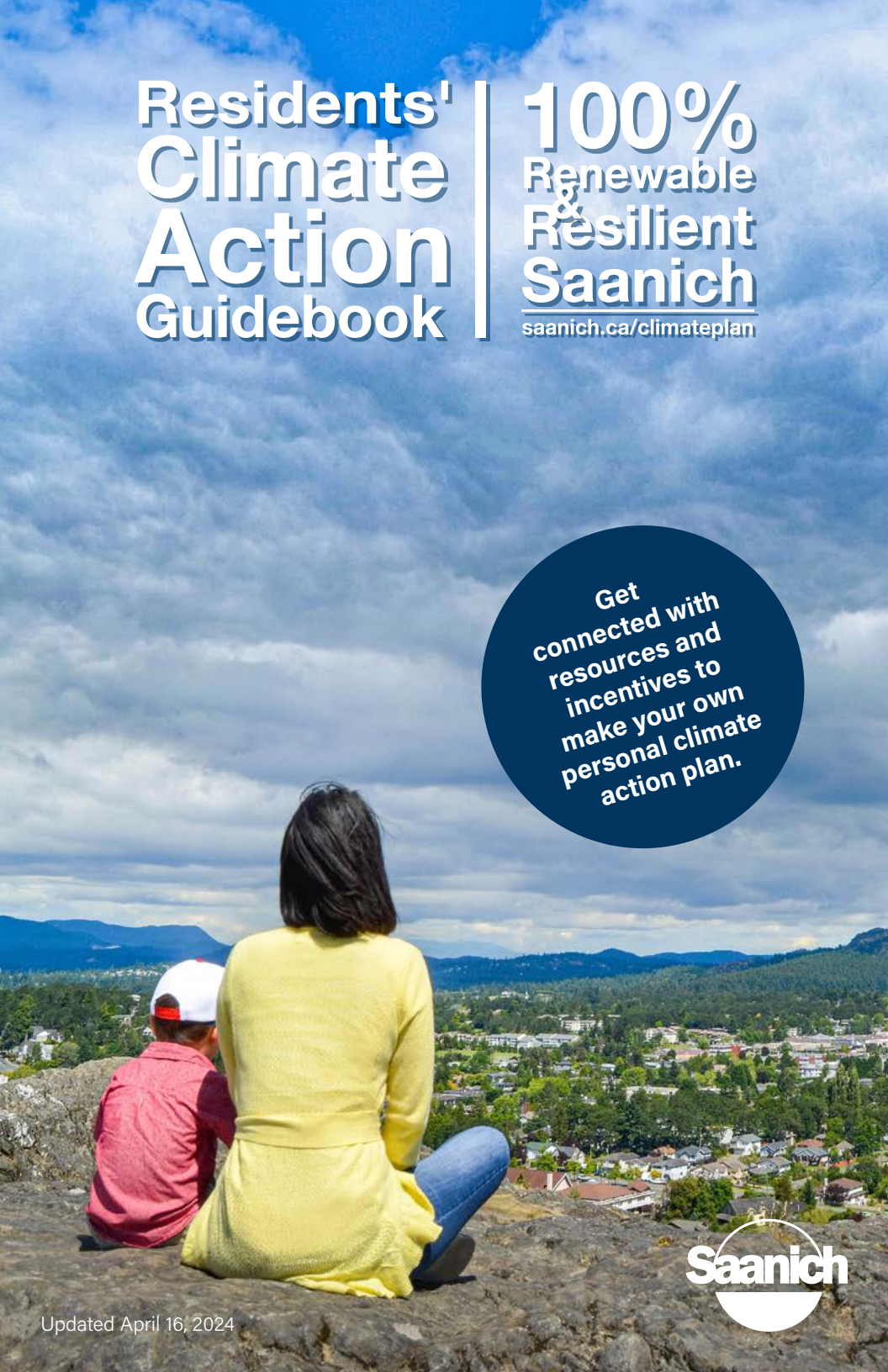
Residents' Climate Action Guidebook

100% Renewable & Resilient Saanich

saanich.ca/climateplan

Get connected with resources and incentives to make your own personal climate action plan.



Saanich

Updated April 16, 2024

Resident's Climate Action Guidebook

Why this guidebook?

We are in the midst of a Climate Emergency. Research over the last 20 years has demonstrated the grave impacts of climate change and the need for greater action to reduce global warming.

The 2020 Climate Plan: *100% Renewable and Resilient Saanich* outlines the actions needed for Saanich to reduce our climate impact, meet our greenhouse gas (GHG) reduction targets and to prepare for a changing climate. The District is taking action, but the Plan is clear that we cannot rely on local government action alone - our success needs action from everyone working together, including residents, businesses, community organizations, institutions, neighbouring local governments and senior levels of government.

So we need your help!

Acting on climate change helps us improve our health and well-being, protect our natural environment, save money, support clean energy jobs, and protect quality of life for future generations. This guidebook is a companion to the 2020 Climate Plan (Saanich.ca/climateplan). The community plays a considerable role in achieving Saanich's climate targets. This guidebook will help you learn about climate change and how you can take part in building a climate-friendly future and provides useful tips and information on programs and incentives available to help.

Photo credit: Alan Thurston

How to use this guidebook

Read through the guidebook to find the most effective ways to reduce your climate impact and increase your ability to adapt to climate changes already happening in our region. Find information about the programs, tips, and incentives available to help. Consider using the guidebook with your friends or family.

In this guidebook you will:

- Learn about Climate Change and how it will affect us in the region
- Learn about the Saanich Climate Plan and our climate targets
- Create your own simple personal climate plan:
  - Step 1: Measure your greenhouse gas (GHG) emissions and set a personal target
  - Step 2: Choose climate-friendly transportation
  - Step 3: Make your home and buildings climate-friendly
  - Step 4: Choose climate-friendly food and materials
  - Step 5: Help improve community and ecosystem resilience
  - Step 6: Make a climate commitment

Understanding Climate Change

Between the sun's energy and the earth's atmosphere, our planet naturally maintains the "greenhouse" that supports life. Human activities that release greenhouse gases (GHGs) into the atmosphere have impacted this natural greenhouse effect. These additional gases trap more of the sun's energy and cause an overall heating of the planet.

Greenhouse gases (GHGs) from human sources include carbon dioxide, methane, ozone, nitrous oxides, and flourinated gases. These gases are released mainly through burning fossil fuels such as gasoline, diesel, heating oil and natural gas. Industrial processes such as agriculture, the decomposition of waste (e.g. landfills), the use of refrigerants, and land use changes, also produce greenhouse gases.

This rise in GHGs from human activity has resulted in an increase in global mean temperature by about 0.8°C since the end of the 19th century. At least another 2°C of warming is expected by the end of this century, unless we act now. Two or three degrees may not sound like much, but scientists warn that this could result in serious and perhaps catastrophic impacts to sea levels, ecosystems, our food supply and our health. This is why a growing number of local governments around the world are declaring a climate emergency.

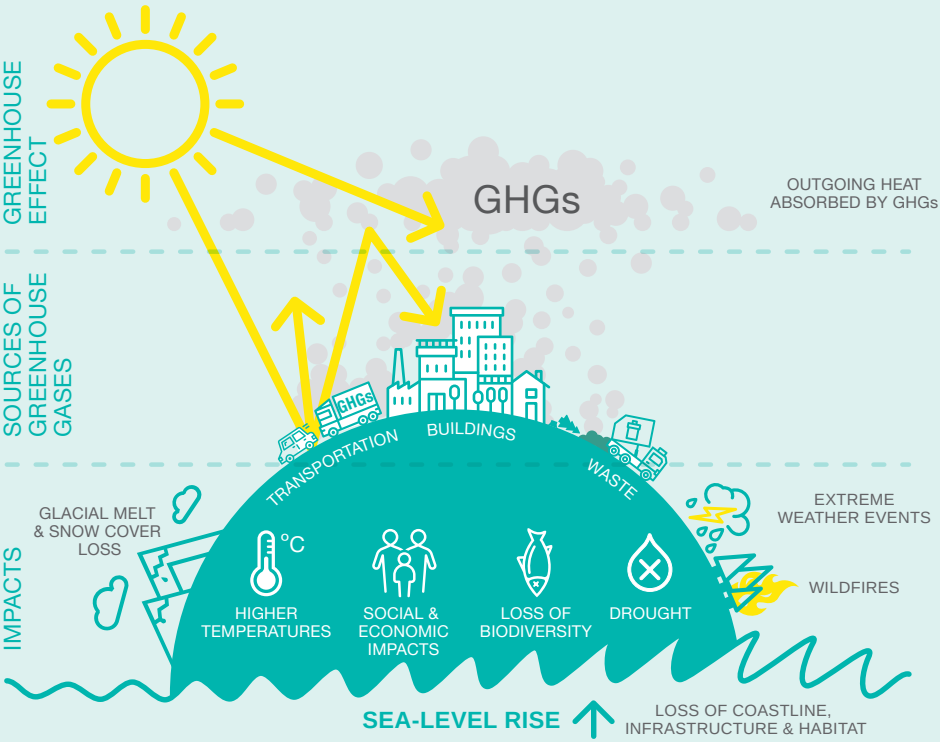


Illustration of climate change impacts
(from the City of Victoria 2018 Climate Leadership Plan, p. 11).
Used with permission from the City of Victoria.

Climate Changes in Saanich

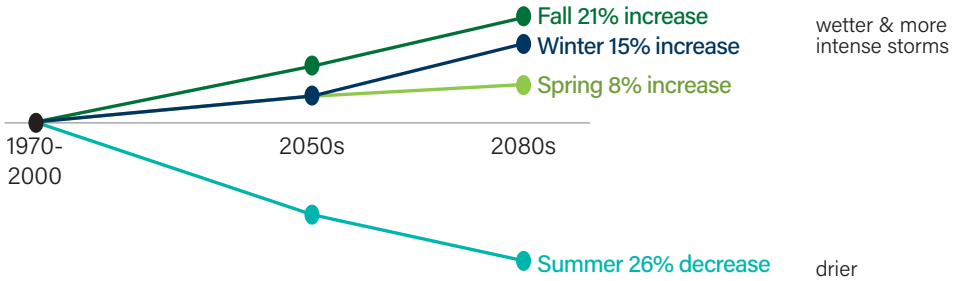
We are already experiencing a changing climate in our region, resulting in hotter and drier summers, wildfires, sea level rise, and increased numbers and intensity of winter storms. Alongside global changes, such as disruptions to the economy and climate refugees, these will impact our ecosystems, infrastructure, agriculture and food security, and health and safety (Saanich Climate Risk Assessment Report available at saanich.ca/climateplan).

What could happen at 1 metre sea level rise?

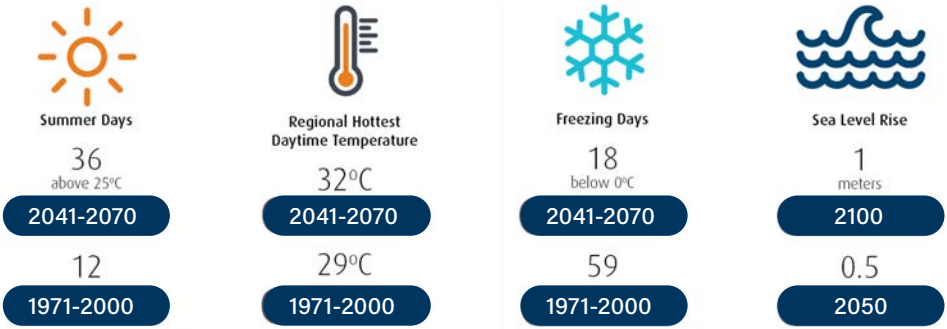
In the Capital Region, especially during a high tide plus storm surge scenario, we could see permanent or temporary flooding in:

- Gyro Park and neighbouring blocks
- Parts of the Saanich Gorge neighbourhood
- Victoria Inner Harbour marina
- Water and stormwater infrastructure
- And many other areas.

Seasonal Changes in Precipitation (Rainfall)



Changes in Temperature and Sea-level



Climate Projections for the Capital Region (CRD, 2017)[1]

See crd.bc.ca/data for more information.

Saanich Climate Plan

The District of Saanich is taking action to protect our community, improve our quality of life, and reduce local and global risks associated with a changing climate.

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body that looks at the current impacts and future risks of climate change and the actions needed to address it. In 2018, the IPCC released a Special Report that described the significant and severe impacts that would happen if our global average temperature were to increase beyond 1.5°C. The report also described how important it was to dramatically reduce our GHG emissions between now and 2030. The targets in the Saanich Climate Plan have been set based on this report.

CLIMATE PLAN GOALS

1. CUT EMISSIONS IN HALF BY 2030 AND TO NET ZERO BY 2050

2. TRANSITION TO 100% RENEWABLE ENERGY BY 2050

3. PREPARE FOR A CHANGING CLIMATE

The Plan looks at both mitigation (reducing our GHG emissions) and adaptation (preparing for a changing climate) in the wider Saanich community as well as the District's operations. It contains **131 actions** across **6 focus areas**. For more information you can read the whole plan at saanich.ca/climateplan.

CLIMATE PLAN FOCUS AREAS

MOBILITY & TRANSPORTATION

BUILDINGS & INFRASTRUCTURE

FOOD & MATERIALS

ECOSYSTEMS

COMMUNITY WELLBEING

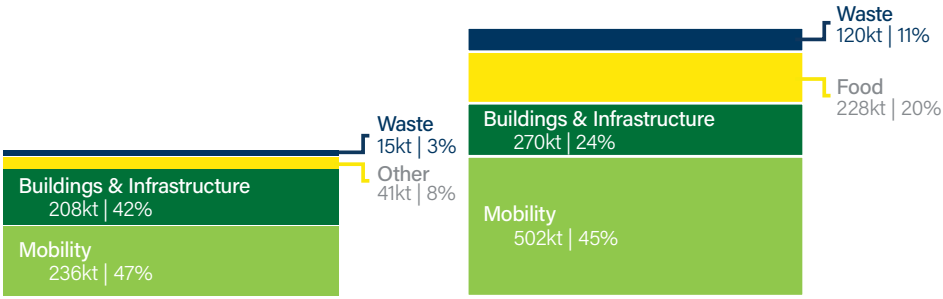
LEADERSHIP IN DISTRICT OPERATIONS

Sources of GHG emissions in Saanich

We measure our climate impact by calculating the greenhouse gases (GHG) we emit as a community. Our Territorial GHG Emissions Inventory addresses greenhouse gasses produced within our municipality and follows the Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories standard. It includes emissions from stationary energy (i.e., from buildings), transportation (based on Saanich registered vehicles), waste, industrial processes and product use (IPPU), as well as agriculture, forestry, and other land use within our borders (AFOLU).

The Consumption-Based GHG Emissions Inventory measures the GHG emissions from all of the goods and services that the Saanich community consumes, regardless of where those goods and services are produced around the world. In a territorial emissions inventory, the emissions from producing goods we consume are counted in the territorial inventories of the producing countries.

Saanich GHG Inventories: Territorial vs. Consumption Based Emissions



2022: Total Territorial Emissions
501 kilotonnes of CO_2e
4.0 tonnes of CO_2e per person

2021: Total Consumption Emissions
1,119 kilotonnes of CO_2e
9.0 tonnes of CO_2e per person

The main source of GHG emissions in our community in both inventories come from burning fossil fuels – such as diesel and gasoline to power our vehicles, and natural gas and heating oil to heat our homes.

There are simple ways to reduce these emissions:
- Reduce the amount of energy we use (often by being more efficient)
- Switch from fossil fuels to renewable energy

E.g. - Getting around town:
- A gas car can be as little as 17-21% efficient and runs on fossil fuels.
- An electric car can be 85-90% efficient and runs on renewable electricity.
- A bicycle uses much less energy overall because it weighs much less than a car and is human powered (or runs on renewable electricity if it is an e-bike!).

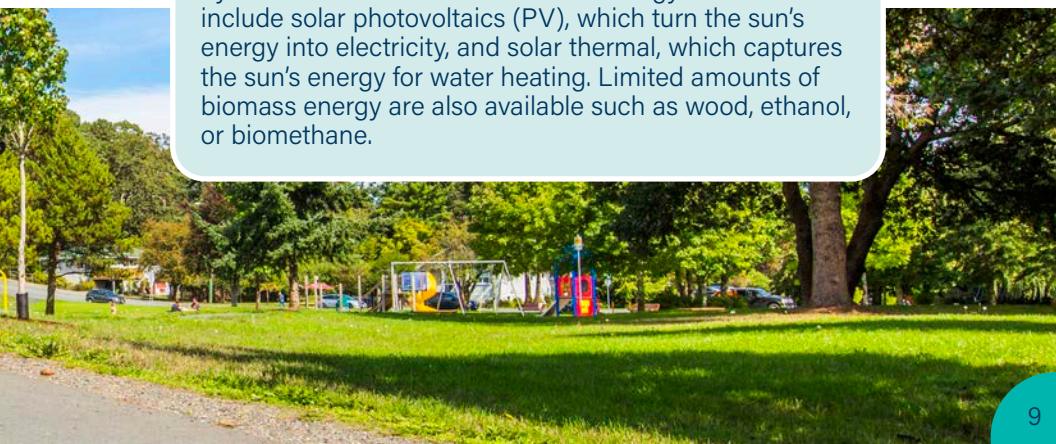
E.g. - Heating your home:
- An older fossil fuel furnace may only be about 60% efficient and runs on fossil fuels.
- A new gas furnace can be up to 98% efficient but still runs on fossil fuels.
- A new electric heat pump can be 300% efficient or more, using very little energy to offer the same or better home comfort and is powered by renewable electricity.
- Improving your home's insulation, windows, and air sealing can decrease your energy needs even more.

E.g. - Reducing consumption and waste of food and consumer goods:
- Check out the resources in this guidebook about low carbon lifestyle tips!

To meet our targets we need transformative change in many areas. Many of these changes rely on choices made by people in Saanich and so we need to deliver on the Climate Plan together.

Renewable Energy in Saanich

BC Hydro's electricity generation is required to be at least 93% renewable and is proposed to be 100% renewable by 2025. Other forms of renewable energy in Saanich include solar photovoltaics (PV), which turn the sun's energy into electricity, and solar thermal, which captures the sun's energy for water heating. Limited amounts of biomass energy are also available such as wood, ethanol, or biomethane.

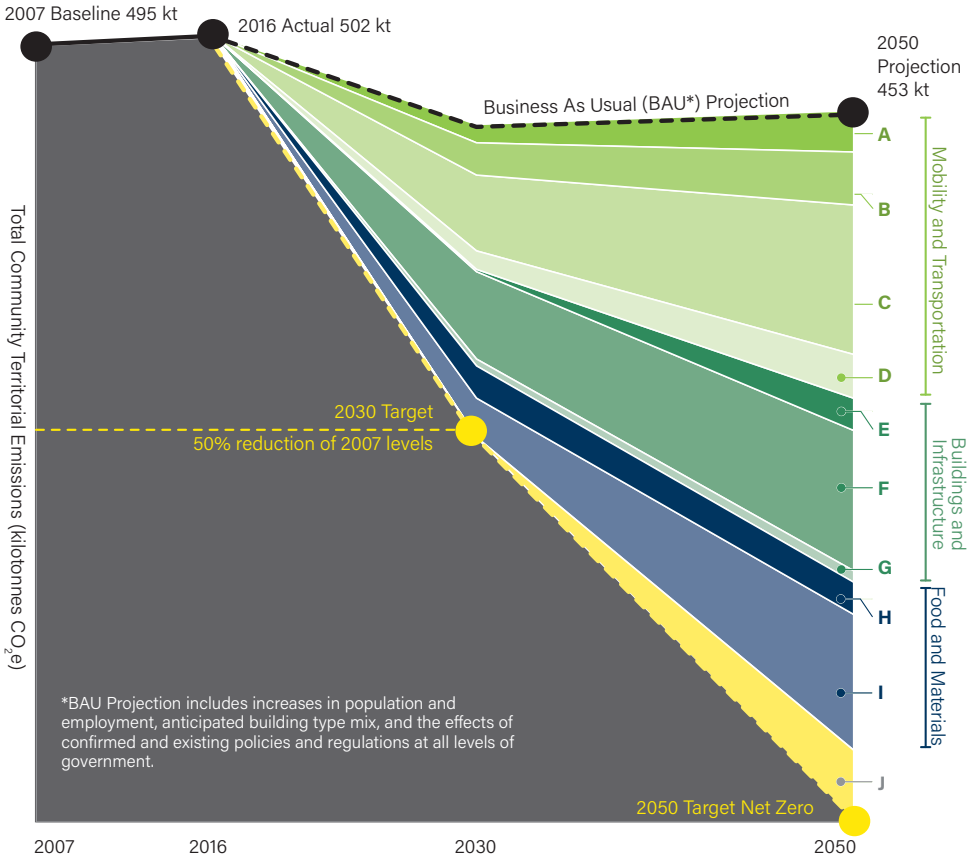


Pathway to reduce our GHG emissions

The Climate Plan has identified a 'Pathway' to achieving our 2050 climate targets. Action must be taken in the first three **Focus Areas** (Mobility & Transportation, Buildings & Infrastructure, Food & Materials) to reduce our current GHG emissions to zero by 2050.

This is shown in the Pathway wedge diagram below. Starting on the top left-hand side with our 2007 baseline, each coloured wedge then represents how much achieving **Objectives** within each **Focus Area** can reduce our emissions over time. You can cross-reference the wedges in the diagram with the description of the **Objectives A to J** on the following page. The percentage by which they contribute to achieving our 2050 target is included in brackets beside each, e.g. C - Electric Vehicles (19.3%) - if 90% of personal vehicles and 50% of commercial vehicles are elctric by 2050, then this will reduce our community wide GHG emissions by 19.3%.

MODELLED PATHWAY FOR TERRITORIAL GHG EMISSION REDUCTIONS IN SAANICH



Mobility and Transportation

A - Active Transportation (5.1%):
- 22% of all trips made by residents and businesses in Saanich are by active transportation (e.g. walking, cycling) by 2030, 30% by 2050

B - Transit Improvements & Electrification (7%):
- 14% of all trips made by residents and businesses in Saanich are by transit by 2030, 20% by 2050
- 100% electric buses by 2030

C - Electric Vehicles (19.3%):
- 36% of personal vehicles are electric by 2030
- 90% of personal vehicles and 50% of commercial vehicles are electric by 2050

D - Renewable Vehicle Fuels (5.6%):
- 10% of remaining transport fuel is biofuel by 2030, 100% by 2050

Buildings and Infrastructure

E - New Construction (4%):
- Highest steps of Step Code (building energy efficiency) by 2025
- 100% net-zero carbon by 2032

F - Building Retrofits (18.3%):
- 100% oil heating replaced by heat pumps by 2030
- 40% of natural gas space and water heating systems replaced with renewable sources by 2030, 100% by 2050
- 40% of all building envelopes upgraded by 2030, 80% by 2050

G - Renewable Natural Gas (1.3%):
- Renewable natural gas (biogas from e.g. anaerobic digestion from organics or methane capture from landfills) use in buildings

Food and Materials

H - Organic Waste Diversion (4.3%):
- 100% diversion of compostable organic waste

I - Reductions from Other Sources (17.5%):
- 33% reduction by 2030 and 100% by 2050 in all other sources of emissions (industrial processes, products [e.g. refrigerants, foams, aerosols], land use change, livestock, manure, fertilizer and agricultural soil management.)

J - More Reductions or Carbon Sequestration (8.8%)
- To be developed. Carbon sequestration means removing carbon dioxide (a key greenhouse gas) from the atmosphere and storing it for a period of time e.g. by planting trees

Reporting on Progress

Progress reports can be read at saanich.ca/climateplan or requested from the Saanich Sustainability Division.

Annual Climate Plan Report Cards

A Climate Action Report Card on progress on actions, metrics, and targets is completed and presented to council annually. To date, emissions are decreasing but more ambitious action is required.

Provincial Reporting

Each year since 2010, Saanich has reported on corporate (District operations) GHG emissions and community climate action to the B.C. Government. From 2010 - 2020, Saanich reported through the Climate Action Revenue Incentive Program (CARIP). As of 2022, the District reports through the Local Government Climate Action Program (LGCAP).

International Reporting

The District joins cities around the world committing to climate action and transparent disclosure of climate action progress. We report through CDP Cities platform and the Global Covenant of Mayors for Climate and Energy. 2020 was the first year Saanich reported publicly, and was rated as an "A list" city through CDP in 2020, 2021, and 2022. We also are fully compliant with the Global Covenant of Mayors' adaptation and mitigation requirements.

CDP DISCLOSURE INSIGHT ACTION A LIST 2020

CDP DISCLOSURE INSIGHT ACTION A LIST 2021

CDP DISCLOSURE INSIGHT ACTION CITIES A LIST 2022

What you can do

Step 1: Measure your GHG emissions and set a personal target

Use the Saanich Carbon Calculator (saanich.ca/calculator) to find out how many tonnes of GHG emissions you have emitted in a year. The lower your GHG emissions, the lower your impact on our planet's climate.

Date		My Results
Total individual tonnes of CO_2e per year		_____ **tCO_2e**
Transportation		_____ tCO_2e
Buildings/Home Energy		_____ tCO_2e
Food Consumption		_____ tCO_2e
Consumable Goods and Waste		_____ tCO_2e

Did you know?

Our Consumption-Based Emissions Inventory suggests Saanich residents emit an average of 6-7 tonnes of GHGs per person per year. In this case, being "above average" means you have a bigger impact on the climate than the average Saanich resident.

My Motivation for Climate Action

What is your motivation for taking climate action? E.g. to protect local or global ecosystems; quality of life for future generations; your and your family's health; being part of the change you'd like to see in the world? Fill in your answer here.

Set your personal GHG target

In order to have a chance of keeping global warming to 1.5°C, **global GHG emissions need to be cut in half by 2030 and reduced to net zero by 2050.**

What's my global fair share?

We in Saanich are high emitters compared to other communities around the globe. Within Saanich some people have bigger GHG emissions than others as well. It is much easier for people with large emissions to rapidly reduce them than for those with already very small emissions. For example, asking someone who frequently flies abroad to consider a local vacation to reduce their emissions is very different to asking someone living on the bare minimum food, water and lodging to survive to reduce theirs.

The Saanich Climate Plan targets assume that everyone in the globe must cut their emissions in half by 2030 and to zero by 2050. But, you can also consider taking a "global fair share" approach and reducing your emissions further, to support those communities who already emit so little. The following table may help you decide what emissions target you would like to set for the coming year or years:

Personal GHG Emission Target for 1.5°C Future

Year	Saanich Climate Plan Target	Global Fair Share Option
Today	No more than 6 tonnes	No more than 3 tonnes
By 2030	No more than 3 tonnes	No more than 1.5 tonnes
By 2050	Net zero	Net zero

My target

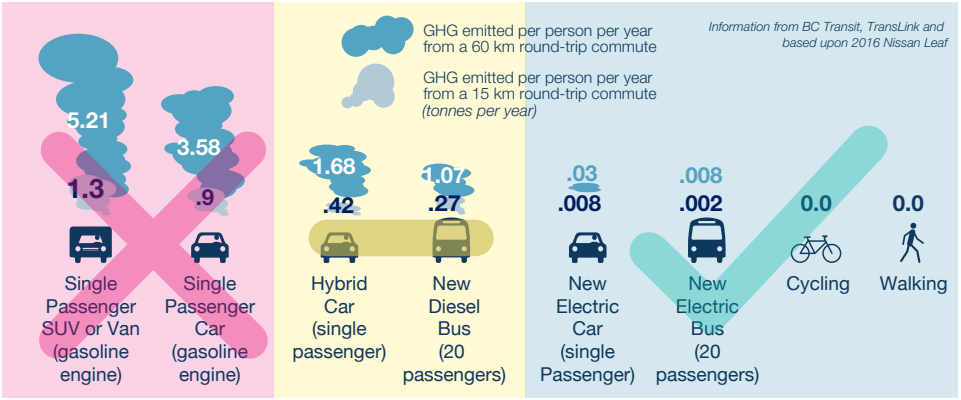
	GHG emissions	Date
My current emissions	_____ tCO_2e	
My target	_____ tCO_2e	

You can check back using the Carbon Calculator to see how your actions are helping to reduce your climate impact. You can also use the calculator to compare the results of different scenarios (e.g. will I reduce my emissions more by upgrading my house or taking transit instead of driving for a year?).

Step 2: Choose climate friendly transportation

Transportation is the largest source of GHG emissions in Saanich, responsible for more than half of our total GHG emissions. 50% of these emissions are from personal vehicles and 39% from light trucks and SUVs, so residents have a huge role to play in reducing transportation emissions.

	Action	Already doing / done	Will do this year	Will do in future years	N/A or not possible
A	Choose more trips by walking, cycling, e-bike (electric bike) and/or public transit				
B	If you own a fossil fuel (diesel/gas) vehicle, replace it with a renewable energy vehicle, e.g. electric vehicles (EVs) or e-bike/electric cargo bike				
C	If you are moving, consider properties close to work, services or bike or transit routes to help you chose more trips by walking, cycling and public transit				



? MORE INFORMATION/SUPPORT

- Electric Vehicles: Pluginbc.ca, Emotivebc.ca, Plugshare.com
- Cycling: Bike Safety Skills Courses through Capital Bike (capitalbike.ca)
- Electric bikes or e-bikes: make cycling easy, helping you get up hills, go farther distances, carry kids and groceries, and wear regular instead of exercise clothes. They run on renewable electricity and your own human power, and charging them is easy anywhere you have a regular outlet!
- Public Transit: bctransit.com/Victoria or 250-382-6161, bctransit.com/umo

WHAT IS SAANICH DOING?

- Building new sidewalks, bike lanes, and public transit amenities
- Providing EV charging stations at our facilities
- Requiring EV charging infrastructure in new development

INCENTIVES (as of February 22, 2024)

Active transportation, public transit and shared-mobility rebates

Visit scrapit.ca for details. (Terms apply and programs change frequently.)

- $935 for an 11 month BC Transit Ecopass
- $500 carshare credit

Electric vehicle (EV) rebates

Visit pluginbc.ca for details. (Terms apply and programs change frequently.)

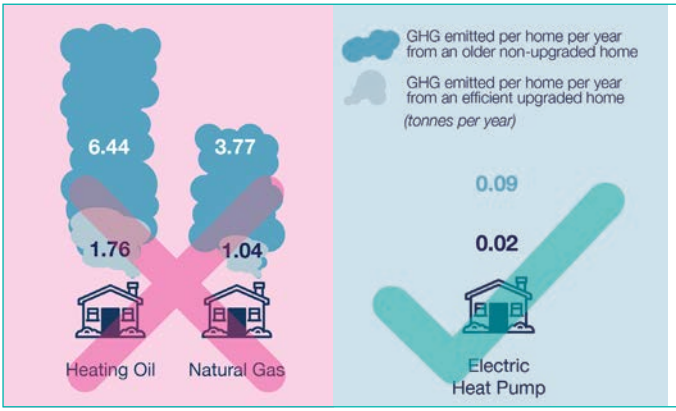
- Up to $5,000 Federal iZEV program
- Up to $4,000 CleanBC Go Electric Passenger Vehicle Rebate Program (income qualified)
- Up to $150,000 or 33% of the price for Specialty Use Vehicles (e.g., busses, utility trucks, cargo E-bikes)

Step 3: Make your homes and buildings climate friendly

If you are a renter or a strata owner, talk to your landlord or your strata council about the actions below.

	Action	Already doing / done	Will do this year	Will do in future years	N/A or not possible
A	Replace fossil fuel (oil, gas, propane) space & water heating systems with renewable energy systems (e.g. heat pumps) with active cooling and air filtration.				
B	Improve energy efficiency of existing buildings by adding insulation, draft proofing and air sealing, upgrading to higher energy efficient windows, doors and appliances				
C	If you are building or buying a new home, choose a high efficient design (e.g. Passive House standard) powered by renewable energy such as electricity				

GHG emissions associated with different kinds of home heating systems



Upgrade your heating system with an electric heat pump!

- Climate friendly heating, cooling, and air filtration
- Up to 3 times more efficient than natural gas heating systems and electric baseboards

? MORE INFORMATION/SUPPORT

- Reducing energy and emissions
  - detached homes: Home Energy Navigator: homeenergynav.ca
  - multi-family buildings and commercial buildings: betterbuildings.ca

WHAT IS SAANICH DOING?

- Adopting the accelerated implementation of the BC Zero Carbon Step Code to require new construction to achieve the Zero Carbon (GHG Emission Level 4) sooner (saanich.ca/stepcode)
- Providing top-up incentives and financing (saanich.ca/heatpumpfinancing) for renewable energy upgrades in existing homes
- Updating Saanich infrastructure for a changing climate

INCENTIVES (as of February 22, 2024)

Home upgrade incentives

(Terms apply and rebates are subject to change.) The rebates below are for single-family homes. Visit betterbuildingsbc.ca for help with multi-family building upgrades.

FREE! Register for Home Energy Navigator (homeenergynav.ca) to get a free Virtual Home Energy Check Up to help get you started.

CleanBC Better Homes		OR	CleanBC Income Qualified Program	
↑ $6,000	for switching from fossil fuel space heating to a heat pump		↑ $9,500	for switching from fossil fuel space heating to a heat pump
↑ $500	for electrical panel upgrades		↑ $3,500	for electrical panel upgrades
↑ $1,000	for switching from a fossil fuel water heater to a heat pump		↑ $5,500	for insulation
↑ $4,300	for combination space and water electric heat pump		↑ $9,500	for windows and doors
↑ $5,500	for insulation		↑ $3,500	for heat pump water heaters
↑ $100	per window and door		↑ $800	for health and safety measures
↑ $2,000	bonus rebates for multiple upgrades		↑ $1,600	for ventilation
	AND MORE!		PLUS	Support in multiple languages

Other Incentives			
↑ $40,000	0% financing for eligible retrofits from Canada Greener Homes Loan	FREE	upgrades for income-qualifying households through ECAP
↑ $10,000	for purchase and installation of heat pumps (including electrical upgrades) for income-qualifying households through the federal Oil to Heat Pump Affordability Program	↑ 25%	Mortgage Loan Insurance Refund from CMHC and Sagen
		PST exemption	on heat pumps
		↑ $12,000	0% financing for heat pumps when upgrading from fossil fuels from Saanich

Step 4: Choose climate friendly food and materials

	Action	Already doing / done	Will do this year	Will do in future years	N/A or not possible
A	Reduce food waste (63% of the food that Canadian households throw away could have been eaten. That amounts to $1,100 a year per household!)				
B	Choose lower carbon foods (see chart on next page)				
C	Adopt "lighter living" to reduce consumption and waste of materials (e.g. repair instead of buying new, and rent, borrow or share rather than owning your own e.g. car sharing, tool libraries)				
D	Buy only what you need and when you do choose 3rd party certified eco-friendly products and clothing, re-using or purchasing second-hand wherever possible				
E	Aim for zero household waste to landfill				

? MORE INFORMATION/SUPPORT

- Tips on reducing food waste through meal planning, food storage, dealing with picky eaters, and more can be found at lovefoodhatewaste.ca
- Tips on reducing, reusing, and recycling: myrecyclopedia.ca
- Tips on protein foods that come from plants: Canada Food Guide

Saanich WHAT IS SAANICH DOING?

- Collecting residential kitchen scraps and garden waste for composting which reduces our community GHG emissions by approximately 7,500 tonnes of carbon each year
- Providing the Saanich Carbon Calculator to help residents understand the relative impact of their food and materials choices saanich.ca/calculator

Protein scorecard from World Resources Institute

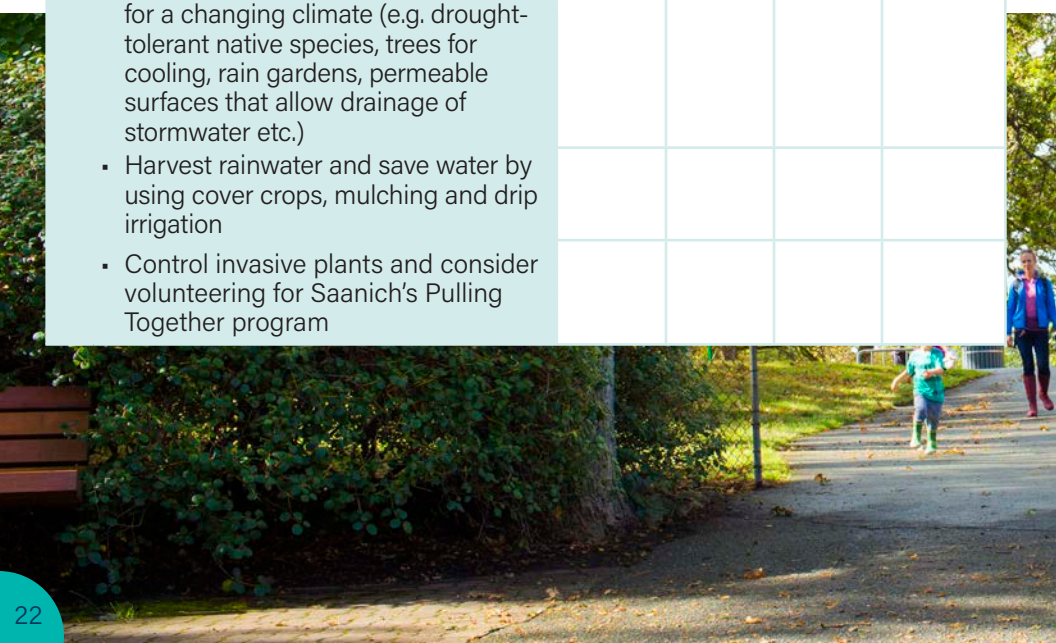
	FOOD	IMPACT (GHG emissions per gram of protein)	COST (Retail price per gram of protein)
LOW	Wheat		$
	Corn		$
	Beans, chickpeas, lentils		$
	Rice		$
	Fish		$$$
	Soy		$
	Nuts		$$$
	Eggs		$$
MEDIUM	Poultry		$$
	Pork		$$
	Dairy (milk, cheese)		$$
HIGH	Beef		$$$
	Lamb & goat		$$$

Lighter shade shows emissions from agricultural production, darker shade shows emissions from land use change.

Step 5: Help improve community and ecosystem resilience

Resilience means the ability to survive and recover from hazards, risks, and challenges that, in this case, come from a changing climate.

	Action	Already doing / done	Will do this year	Will do in future years	N/A or not possible
A	Maintain an emergency plan and emergency kit				
B	Get to know your neighbours - support each other, share your tools and your climate knowledge, plant a pollinator corridor together!				
C	Support local farmers and buy local and ideally certified organic produce				
D	Grow your own food (e.g. vegetable gardens, fruit trees, chickens)				
E	Help local ecosystems to thrive and adapt ▪ Plant and care for a native tree				
	▪ Create habitat for birds, bats, bees and other wildlife using native plants (saanich.ca/naturescape)				
	▪ Design landscapes on your property for a changing climate (e.g. drought-tolerant native species, trees for cooling, rain gardens, permeable surfaces that allow drainage of stormwater etc.)				
	▪ Harvest rainwater and save water by using cover crops, mulching and drip irrigation				
	▪ Control invasive plants and consider volunteering for Saanich's Pulling Together program				



MORE INFORMATION/SUPPORT

- Visit saanich.ca and search for:
  - Saanich Emergency Program resources
  - Savour Saanich guide to local farms and food in Saanich
  - Community gardens in Saanich
  - Backyard Chickens info in Saanich
  - Naturescape Program to help you protect, maintain and enhance wildlife habitat and native biodiversity on your property.
  - Neighour to Neighbour Resilience Initiative (saanich.ca/n2n) for grants for neighbourhood groups
  - Stormwater Management and Low Impact Development design guides to manage rainwater on your property.
- Consider volunteering with the Saanich Pulling Together ecological restoration program and check out the Natural Intelligence program (saanich.ca/naturalintelligence).

WHAT IS SAANICH DOING?

- Committing to using resilience as a guiding principle in all decision-making (e.g. for capital investments, policies and operational practices)
- Committing to upgrading corporate facilities and infrastructure to maintain routine service levels in light of climate change
- Supporting local farm viability and local food production through the Official Community Plan, Zoning Bylaws, the Savour Saanich guide, implementation of the Agriculture and Food Security Plan, and more.
- Permitting and supporting farmers' markets, community gardens, and backyard chickens.
- Managing natural areas for resilience and carbon sequestration
- And more!

See climate commitment from other Saanich residents

Visit saanich.ca and search for "Share your climate commitment"

Step 6: Make a Climate Commitment

My target

	GHG emissions	Date
My current emissions	_____ tCO_2e	
My target	_____ tCO_2e	

My Personal Climate Plan

Make a 3-point climate action plan for this year by looking back through the guidebook at actions you committed to. Find a witness, or better yet, a climate buddy! Use the saanich.ca/calculator to track how your actions are reducing your climate impact.

1

2

3

My name: ate:

My witness/ climate buddy:

Get involved in community action

Our success in responding to the climate challenge needs action from everybody, including residents, businesses, community organizations, institutions, neighbouring local governments, and senior levels of government. What are your ideas for community climate action? (E.g. walking school buses, community gardens, repair cafés, engaging with government and industry, switching to a climate friendly bank and investments etc.)

For more information and to sign up to our Climate Quarterly Newsletter visit saanich.ca/climateplan or email sustainability@saanich.ca.