OAK BAY COOLKIT

FOR NEIGHBOURHOOD ACTION ON CLIMATE CHANGE

A VISUAL "DO-IT-YOURSELF"
TOOLKIT FOR ENGAGING NEIGHBOURS
ON YOUR BLOCK

2022

DISTRICT OF OAK BAY

UBC CALP

WHO IS THIS FOR?

- **Community members** wanting to have meaningful interaction with their neighbours in caring for the places where they live
- **High school students** and **youth groups** wanting to get involved in climate action
- **Practitioners, teachers, librarians,** and **community leaders** running neighbourhood engagement programs

WHY DO WE NEED THE COOLKIT?

Our communities are changing. How can we understand and manage that change? The Coolkit is designed to help you:

- Learn about your block and how climate change affects it
- Meet your neighbours and talk to them about climate change
- Improve quality of life on your block
- Climate-proof your home and neighbourhood
- Cut your carbon footprint together with your neighbours

TERRITORIAL ACKNOWLEDGEMENT

We acknowledge that the land on which we gather is the traditional territory of the Coast and Straits Salish Peoples. Specifically we recognize the Lekwungen peoples known today as the Songhees and Esquimalt Nations, and that their historic connections to these lands continue to this day.

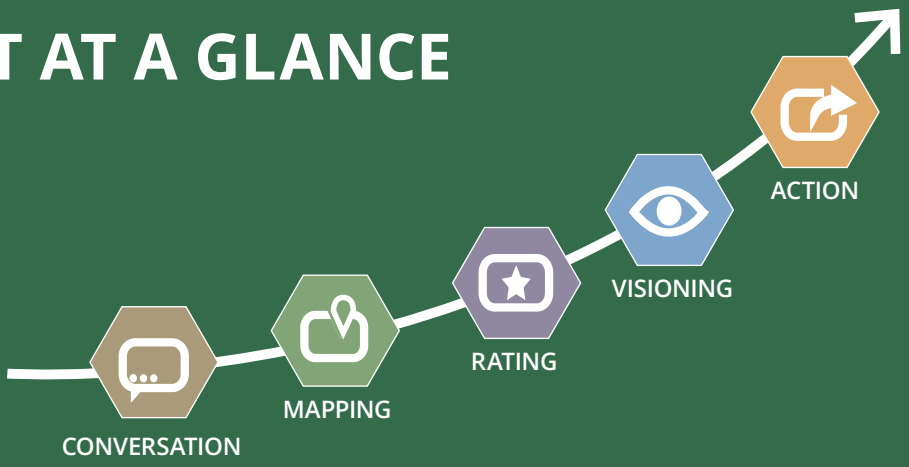
WHAT CAN WE DO?

Oak Bay, along with other local communities, has declared a Climate Emergency. UN scientific reports call for our carbon footprints to be cut in half by 2030, if we are to stay within 1.5°C of global warming. We also need to climate-proof our neighbourhoods, to prepare for unavoidable climate impacts. The Oak Bay Coolkit provides multiple fun ways for the community to come together on the Climate Emergency, empowering local residents to take positive action and make Oak Bay even better than it is already.

MAKING OAK BAY MORE CLIMATE-FRIENDLY

Things to be proud of:	Things to work on:
Tree Canopy (33%) (2021)	• Increasing the tree canopy to 40%, especially in lower canopy neighbourhoods. • Preparing for big trees to age out and stormwater upgrades impacting trees.
Walkability Daily Mode Share: 29% **Cycling** Daily Mode Share: 4% **Electric Vehicles (EVs)**	• Better network of bike paths. • Behaviour change e.g. carbon budgets for plane flights and commuting. • Switching to active transport, public transit, electric bikes, car shares, EVs.
Neighbourhood Character	• Switching gas and oil furnaces to electric heat/cooling pumps. • Climate proofing/adapting existing properties. • Limit new development building footprints, impervious area, tree removal.
Ecological Restoration of Parks and Natural Areas	• Ecological restoration on private land, streets and boulevards.

COOLKIT AT A GLANCE



A do-it-yourself 5-step process on climate change that gradually ramps up community engagement in several steps

HOW TO USE THE COOLKIT ?

Scope

This booklet aims to help you climate-proof your home and neighbourhood while improving the urban forest that helps protect your home. This booklet is full of fun tools and hands-on activities that are organized into 5 steps: chatting, mapping, rating, visioning and acting. These activities aim to help you see your neighbourhood in a new way, make climate change visible, and re-imagine your future. Pick the activities that you find the most interesting - or do them all if you wish!

Where can I use the Coolkit?

Most of the activities here are simple, easy, and fun to do with family, friends and neighbours! Consider introducing the Coolkit at a block party, when spending time with neighbors or friends, or on Facebook. Don't forget to bring a copy of the Coolkit along with some pens, markers, and other required materials.

Block Party

A good place to start the conversation and hold introductory games or exercises with your neighbours.

Informal Gathering

Over coffee, wine, or supper at someone's home or a cozy meeting place nearby to discuss further activities.

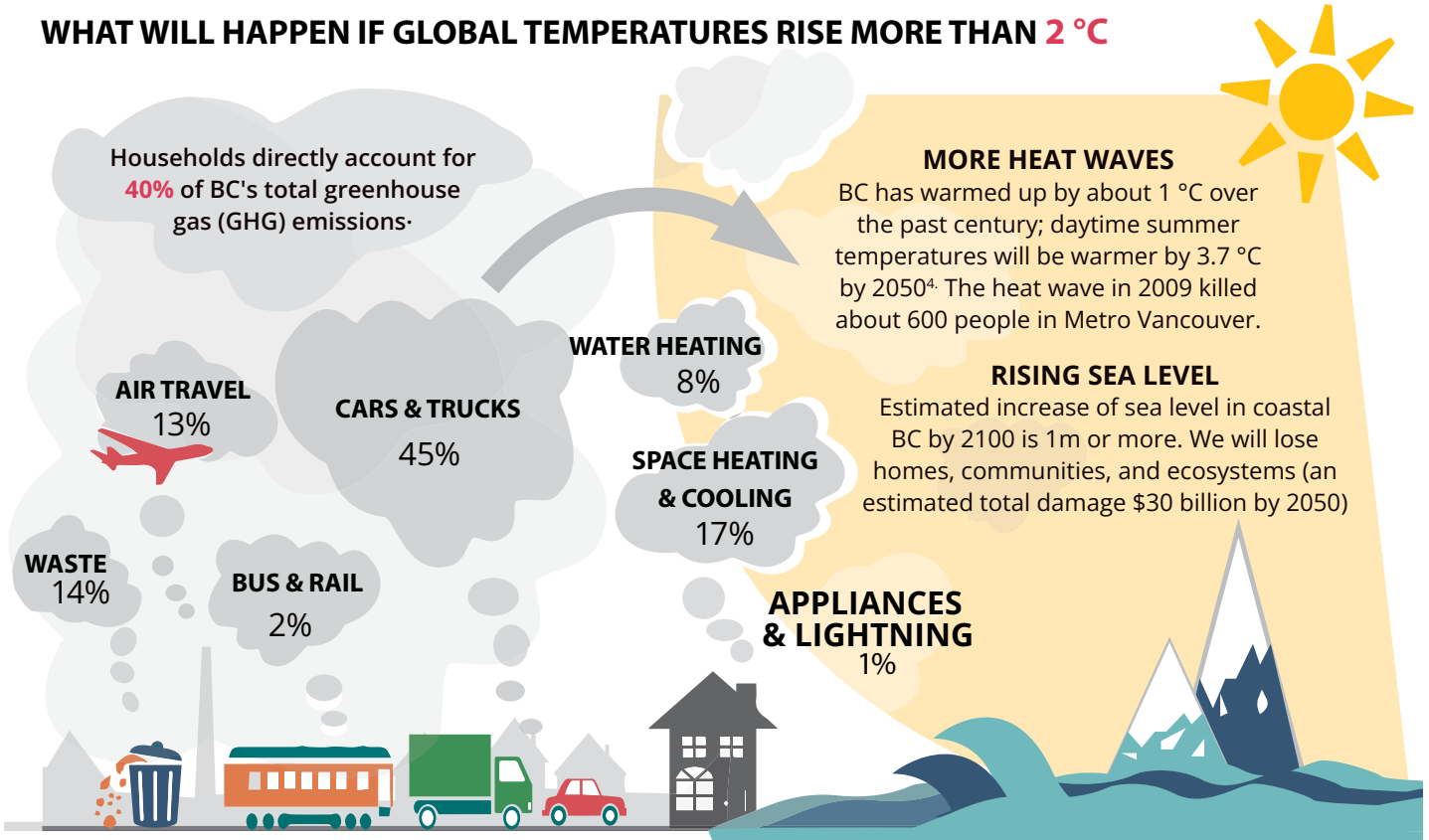
If it is hard to meet in person, don't give up! Consider **online** options such as creating and using a Facebook group or meeting regularly on Zoom. You can also follow us on Instagram or Twitter (@**calpubc**) to keep an eye on upcoming events and share your ideas under the posts.

WHY BOTHER ABOUT CLIMATE CHANGE ?

Climate change is happening

The main **CAUSE** of climate change is carbon emissions produced from human activities (e.g. driving cars, building houses), which adds to the greenhouse effect, trapping heat and further warming the Earth's surface. Canada has committed to keep global warming to below 2 °C (relative to pre-industrial levels).

WHAT WILL HAPPEN IF GLOBAL TEMPERATURES RISE MORE THAN 2 °C



British Columbia has committed to reduce its carbon emissions to:

- **60%** below 2007 levels by 2030 for buildings and communities
- **80%** below 2007 levels by 2050 (overall)

What is an Urban Heat Island (UHI)?

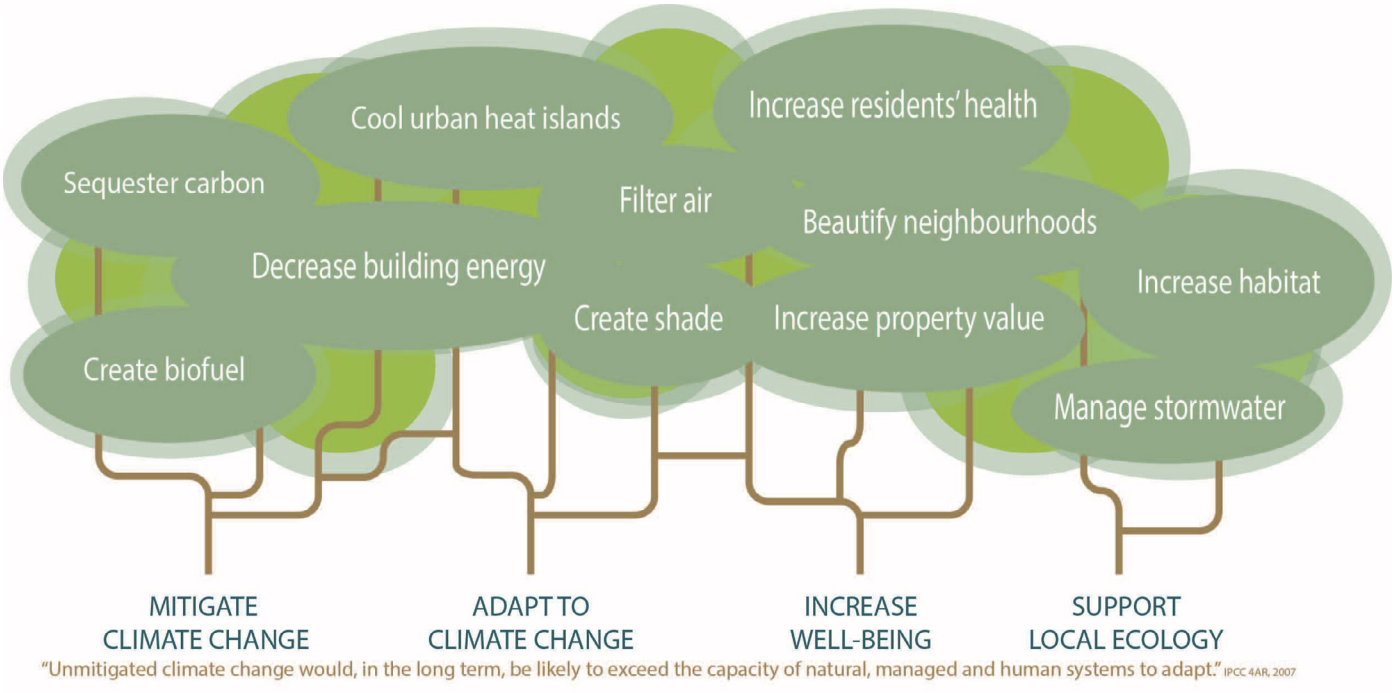
An urban heat island occurs when a city experiences much warmer temperatures than nearby rural areas. The difference in temperature between urban and less-developed rural areas has to do with how well the surfaces in each environment absorb and hold heat.

HOW CAN URBAN FORESTS HELP ?

What is an urban forest?

The urban forest includes a variety of vegetation and landscape types such as parks, streetscapes, natural areas, and private yards, which together form a complex system of urban greenery.

A healthy urban forest will be vital in a hotter, unpredictable future to protect human health during heatwaves, reduce our reliance on air conditioning, reduce flooding, absorb carbon, and provide habitat to wildlife. An urban forest also increases property value and happiness. Our gardens can further help us adapt to climate change by growing food (reducing reliance of imported produce).



Infographic by Sara Barron

How large is our urban forest?

33% of Oak Bay is covered by tree canopy consisting of more than 10,000 trees, as calculated and mapped by the city. The goal is to reach 40% canopy cover.

Canopy cover mapped by landuse:

- **44%** Uplands
- **42%** Community and Institutional
- **35%** Parks and Open Spaces
- **29%** Commercial and Mixed use
- **28%** Established Neighbourhoods (most of Oak Bay)
- **18%** Multi-Residential

HOW CAN RENEWABLE ENERGY HELP ?

What is renewable energy?

Renewable energy is the energy generated from natural processes that is continuously replenished. This includes sunlight, geothermal heat, wind, tides, and water, which will not be exhausted and is constantly renewed.

Renewable energy will become one of the most effective tools for us to combat climate change as these sources displace traditional carbon-intensive fossil fuels, the main cause of human-related climate change. Furthermore, renewable energy can save money and increase job opportunities in the long-term.

POTENTIAL ECONOMIC AND ENVIRONMENTAL IMPACTS OF RENEWABLE ENERGY

Lower energy costs | *Reduce electricity bills* | *Support domestic green jobs*

Decrease air pollution | *Improve reliability and energy independence*

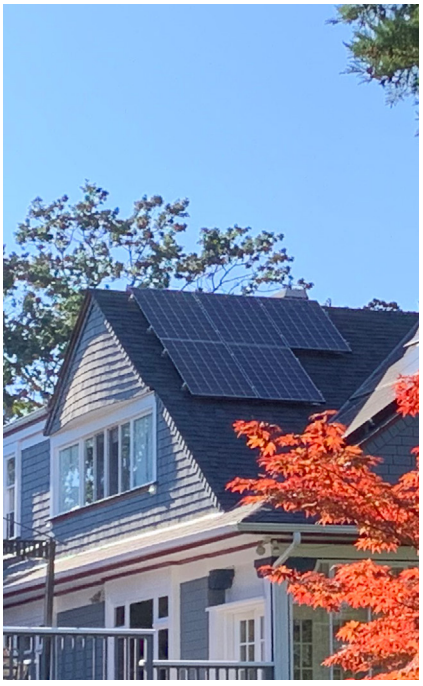
Provide recreational and educational value | *Lower GHG emissions*

Reycling

Hydrogen and Fuel Cells

Wind Power

Solar Panel



Electric Vehicles

Hydroelectricity

Tide and Wave

Sustainable

UBC's CALP team has developed a tool called **Community Energy Explorer (CEE),** which is a web resource, designed to provide communities and citizens with information and tools for local energy planning and carbon emission mitigation. To learn more about CEE please visit:
https://calp.forestry.ubc.ca/community-energy-explorer/

STEP 1: START A CONVERSATION

Now that you know how important climate change and urban forests are to the future of our city, it's time to share that knowledge with your family, friends, and neighbours. Here we provide some activities to help you start a conversation with others on climate change and urban forests.

1.1 SIGNS OF CLIMATE CHANGE on your block

1.2 STORY COLLECTION to recognize the changes in your neighbourhood

1.3 PHOTO COLLECTION to record and reflect on things you value on your block

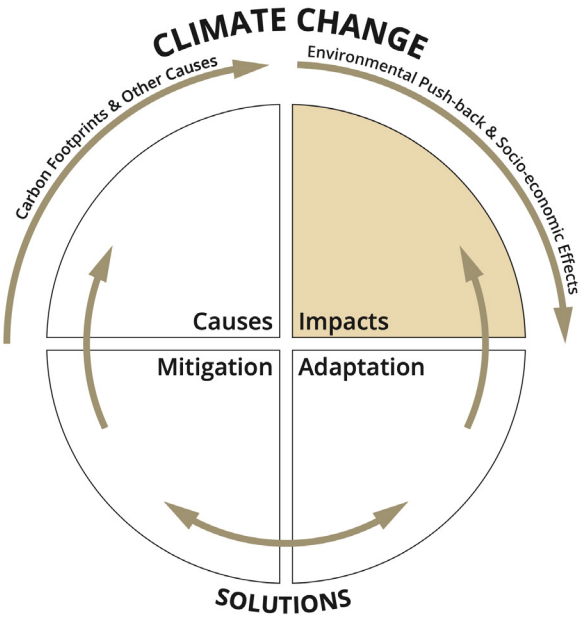
1.1

START A CONVERSATION
SIGNS OF CLIMATE CHANGE

Why do this? To find signs of climate change in your block.

Here we are looking for signs of "CIMA".

C AUSES:	Anything that produces high carbon emissions
I MPACTS:	Consequences of climate change & vulnerability to future impacts
M ITIGATION:	Ways to reduce carbon emissions
A DAPTATION:	Ways to deal with the impacts of climate change



Examples of what to look for:

Consider potential impacts based on possible threats in different seasons, or what activities related to mitigation or adaptation could potentially take place. For instance, mature trees can be a potential impact if they are unhealthy and blow down in wind storms, but are more often an adaptation against the effects of climate change by reducing the impacts of heat waves and stormwater floods.

Causes
- Heating - natural gas/oil burning
- Poor roof insulation
- Automobiles
- Concrete/asphalt

Potential impacts
- Increased home cooling costs
- Tree decline/death
- Tree failure - damage to property
- Drought - water restrictions

Mitigation
- Car pool or car-share
- Travel by bike or on foot
- Limit use of automobiles

Adaptation
- Grow a vegetable garden
- Plant trees for shade and insulation
- Plant drought resistant ground covers and plant variables

1.2

START A CONVERSATION
STORY COLLECTION

Why do this? To recognize how much your neighbourhood has changed over the past decades, through changes in urban development, lifestyles, tree growth, and climate change impacts.

Collect stories and images of the changes that have happened on your block.

More greenery or less greenery? Smaller homes or larger homes? Changes in weather patterns? More cars or less cars? How do you feel about this?

Steps

1. Grab a pen and a notebook
2. Spend a pleasant afternoon with your relatives or your neighbour(s) who have lived in the area for a while
3. Record the stories you hear and what you see
4. Share your collections online

Record stories and observations:

1.3

START A CONVERSATION
PHOTO COLLECTION

Why do this? To recognize things you value around your block and how they relate to climate change.

Photo Collection Activity

Each person or household takes a picture of:

- Your favourite tree, place or view
- Something you connect climate change
- Optional: Collect old photos of the block to compare changes over time.

Create a scrapbook of your photos!

OPTION 1: A photo gallery

Get together to share, display, and discuss your photos with others

OPTION 1: An online album

Free online options may include Facebook, Google Photos, or Instagram

What I noticed and learned:

STEP 2: MAP YOUR BLOCK

Do you know much about the trees on your block? Have you ever tried to inventory important things on your block and consider their links to climate change? Do you live on a high carbon or low carbon block? The activities in this section will help you see your surroundings in a new way, and learn to use some simple mapping techniques.

2.1 URBAN FOREST QUEST allows you to investigate "squirrel habitat" (tree canopy) and other features of your urban forest

2.2 "HABITAT" MAPPING on your block to see how green or grey it is and where it could be improved

2.3 VULNERABILITY MAPPING allows you to find parts of your block which would be under the greatest threat from climate change

2.4 CLIMATE CHANGE DETECTIVE QUEST allows you to investigate "car habitat" and other signs of climate change

2.1

MAP YOUR BLOCK
URBAN FOREST QUEST

30 minutes

DO YOU KNOW...

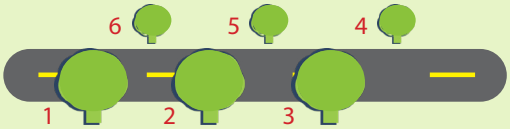
How much squirrel habitat is on your block?
How many trees there are on your block?
Why trees are important to us and squirrels?

Your name/team name

_____

1) COUNT THE TREES

Street trees are trees alongside the curb in the public right-of-way. Count the number of street trees on your block.



Total # of street trees: _____

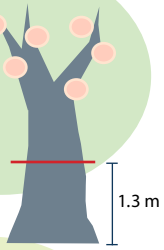
Total # of trees in gardens: _____

2) MEASURE TRUNK SIZE

Measure the circumference (girth) of the biggest and smallest trees. At around 1.3 metres (or 4.5 ft) up from the ground, measure around the tree's stem.

Girth of biggest tree: _____cm

Girth of smallest tree: _____cm



3) THE LEAPING SQUIRREL TEST

Check out your block's street tree canopy by using the distance a squirrel leaps. Squirrels live up in the trees and are safer there than on the ground. Assume squirrels can leap about 2 metres (6 ft or a person's height) between branches:

Can a squirrel make it from one end of the block to the other and cross the street at least twice, without coming down to the ground?

Yes / No

If "No", how many gaps (greater than 2 metres) between canopies did you see?

_____

Important because...
Larger trees have bigger canopies and so more benefits. Smaller trees are also important since they will replace existing big trees one day.

Important because...
A continuous canopy has more shade during the summer for cooling and reduces stormwater flooding.

To read more: https://www.oakbay.ca/sites/default/files/recreation/documents/final-report-new.pdf

FINISHED!

2.2

MAP YOUR BLOCK
"HABITAT" MAPPING

Why do this? To quickly identify different types of "habitats" or surfaces that have implications for climate change in your neighbourhood.

0.5-1.5 hours

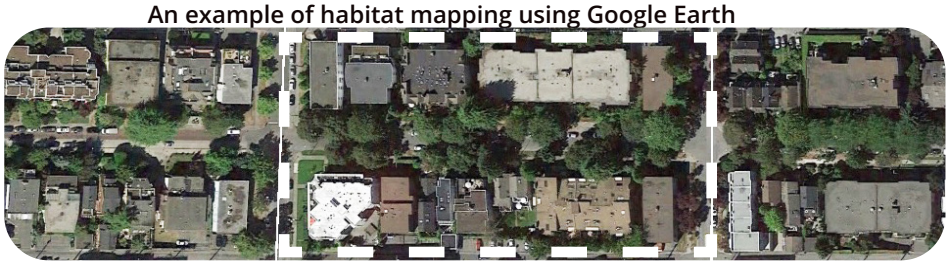
You will need:

Several colourful markers and satellite photos of your block/yard for mapping. Depending on the mapping tools you use, you will need a computer or some hard copies of photos (you can print them on regular paper instead of photo paper). Recommended paper size: 11" by 17" or 18" by 24"

What is habitat mapping?

There are many different habitats (other than human habitat) on your block. Here are some examples of different habitats that you can map in this exercise:

An example of habitat mapping using Google Earth



"Squirrel Habitat" - Trees & Canopy

Now that you have an idea of how safe it is for squirrels on your block after the Urban Forest Quest (page 14), examine all the trees on your neighbourhood map and figure out how much canopy cover you have. Urban tree canopies have many important benefits, such as lowering temperatures and reducing storm effects.

30% of total area is squirrel habitat

"Worm Habitat" - Lawns & Soil

These soft pervious surfaces allow water to pass into the ground, reducing the flooding and amount of contaminants entering streams all at once. Soil provides important habitat for many types of underground creatures, and space for trees, plants, and fungi to grow.

35% of total area is worm habitat

"Car Habitat" - Hard pavement

Pavement is an impervious surface, which forces stormwater into sewers or pipes rather than into the soil. This can result in chemicals from the road entering streams and heavy water flow damaging stream banks. Roads and parking lots also take up a lot of space and increase temperatures.

20% of total area is car habitat

"Pigeon Habitat" - Buildings & Roofs

These hard surfaces also affect storm water drainage, often directing rainwater straight into the drains and not to the plants which need it during droughts. Roofs can also provide space for solar panels or green roof installation, which can help mitigate and adapt to the effects of climate change.

45% of total area is pigeon habitat

2.3

MAP YOUR BLOCK
VULNERABILITY MAPPING

Why do this? To quickly identify possible risks to the neighbourhood from climate change.

1-1.5 hours

You will need:

- Coloured pens and a paper print-out of an aerial photo of your block (Google Earth)

What is vulnerability mapping?

Vulnerability mapping shows the areas which may be susceptible to damage from environmental or manmade threats, such as climate change. This type of mapping can help you think differently about the kind of risks that could affect your block and help you label things you may want to change. This is a simple mapping exercise in which you will identify high and low risk areas of your block based on one or more climate change threats of your interest.

Steps:

1. Print out an aerial photo of your block (8.5" by 11" landscape)
2. Choose one or more risk features from the diagram below such as urban heat island effect (UHI), drought, or floods. Refer to page 6 for more details on climate change risks likely to occur in Oak Bay.
3. Identify parts of your block that would be most susceptible to these threats
4. Identify parts of your block which would be least susceptible to these threats, such as dense canopy, white roofs, and pervious surfaces - refer to page 17 for descriptions of these surfaces
5. Colour in or mark high and low risk features with your own colours or symbols
6. Think about your results, how vulnerable your block is, and what you could do to help improve conditions for the future

Aerial photo of a neighbourhood block with some high and low risk features labeled

2.3

MAP YOUR BLOCK
VULNERABILITY MAPPING

Walk around the block, or look at Google Earth/Map Street View to see conditions on the ground.

HIGH RISK: Heat Island Effect (UHI)

In this photo

Pavement & concrete
- Absorb more solar heat
- Reduce evapotranspiration

Dark surfaces (e.g. roads, roofs)
- Absorb more solar heat

Other features to look for

Tall buildings in dense cities
- Trap more heat through the absorption and reflection of sun on multiple surfaces
- Block cool air flow

HIGH RISK: Flooding

In this photo

Pavement & concrete
- Reduce storm water infiltration

Low laying/flat areas
- Can overfill with storm water

Poor drainage
- Causes pooling of water

Other features to look for

Streams
- Can cause flooding if peak flows exceed surface level

Sewers/drains
- Blockages can cause pooling

HIGH RISK: Drought

In this photo

Drought intolerant species
- Require frequent watering (e.g. turf grass)
- Consider summer water restrictions

Low precipitation/dry season
- Especially July-August in Vancouver

High sun exposure
- Especially south and south-west facing areas

Human modified soil
- Soil in built environments is often shallow and eroded
- Holds less water

LOW RISK: Cooling effects, storm water mitigation

In this photo

Large trees growing together
- Cool the air (evapotranspiration)
- Insulate against storms
- Reduce storm water runoff

White roofs
- Reflect heat - reduce UHI

Pervious surfaces
- Reduce storm water runoff
- Store water
- Filter contaminants

Trees near south-facing windows
- Provide shade - reduce cooling costs

Other features to look for

Food gardens
- Increase foods security
- Reduce carbon emissions

Small trees
- Will grow and provide more shade
- Will reduce costs

Solar panels
- Reduce carbon emissions

2.4

MAP YOUR BLOCK
CLIMATE CHANGE DETECTIVE QUEST

30 minutes

DO YOU KNOW...

How many carbon-emitting cars park on your block?
How much local food is grown on your block?
Whether your roof is suitable for solar panels?

Your name/team name

_____

_____

CASE 1: TRANSPORTATION

Difficulty ★

1. How many cars are on your block? Total: _____

2. How many cars are electric, hybrid vehicles, or carshares (eg. Modo)?

Total: _____

*% of sustainable cars on your block:

Simply divide your Q2 answer with Q1!

Ex. If Q1 is 8 and Q2 is 2: 2/8 = 1/4 = 0.25 Total: _____

3. How many people are riding bikes in /through your block?

Total: _____

Important because...

Vehicles using gasoline or diesel account for 47% of household emissions in BC.

To read more:
http://www.davidsuzuki.org/issues/climate-change/science/climate-solutions/transportation-solutions/

CASE 2: FOOD

Difficulty ★★

1. How many households have gardens (planted areas with shrubs and/or trees) on your block? (If gardens are out of sight, try asking your neighbours!)

Front yard: _____ Backyard: _____ Total: _____

2. How many households are growing food (vegetables, fruit...)?

Total: _____

*% of food gardens on your block:

Divide your Q2 answer with Q1! Total: _____

3. What is the most commonly grown vegetable on your block?

_____

How does local food help climate change?

Carbon emissions come from meat production, use of pesticides and fertilizers, and the transportation of food.

To read more:
http://www.davidsuzuki.org/what-you-can-do/food-and-our-planet/

CASE 3: SOLAR ENERGY

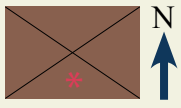
Difficulty ★★★

1. How many buildings have solar panels on their roofs?
Count the number of buildings with solar panels.

_____

2. How many buildings have roofs suitable for solar energy? Count the number of buildings with south-facing roofs large enough for solar panels.

_____



Roof

* This side faces South

You've cracked all the cases!

STEP 3: RATE YOUR BLOCK

HOW CLIMATE FRIENDLY IS YOUR BLOCK?

This section contains a carbon footprint calculator and two SCORECARDS to let you assess how prepared your neighbourhood is for climate change, and how green it is, by answering some questions about your household and block.

Compare your results with other blocks - and see who has the highest score!

3.1. **CALCULATE YOUR FOOTPRINT** to find out how big your personal climate impact is

3.2. **RATE YOUR HOUSEHOLD** to evaluate your home's impact on our planet's climate

3.3. **RATE YOUR BLOCK** to evaluate your block's impact on our planet's climate

RATE YOUR BLOCK
CALCULATE YOUR FOOTPRINT

Do you know your carbon footprint?

We strongly recommend that you find your carbon footprint so you know your biggest areas of resource consumption.

Visit: *https://www.saanich.ca/EN/main/community/sustainable-saanich/climate-change/carbon-fund-calculator.html*

Carbon Calculator: How big is my personal climate impact?

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

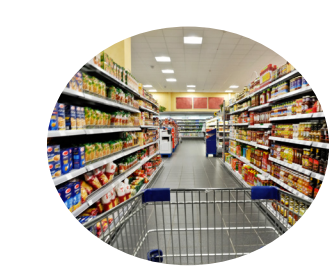
Which of the Carbon Lifestyles Below is Most Like You?

	Aimée Grande	GHGs tCO2e	Diego Medio	GHGs tCO2e	Jean Small	GHGs tCO2e
Transportation						
Daily Travel	Gas truck for 30 km per day.	3.05	Hybrid car for 15 km per day.	0.84	Electric car for 15 km per day.	0.06
Long Distance Travel	Flies to the UK twice a year, and within North America 2 times a year.	1.73	Flies to Mexico once a year for vacation.	0.47	Vacations in Tofino and Rathtrevor by electric car.	0.01
Home						
	Non-upgraded oil heated older home.	6.55	Non-upgraded gas heated older home.	4.00	Upgraded efficient older home with a heat pump for heating and cooling.	0.21
Food						
	• Heavy on beef, cheese, and other animal foods. • Significant food waste/spoilage	3.02	• Most animal protein from poultry/pork/ fish, with less beef and cheese. • Moderate food waste/spoilage.	1.55	• Mostly plant-based diet with occasional poultry/pork/fish. • Very little to no food waste/spoilage.	0.97
Consumable Goods and Waste						
	• High consumption and waste.	1.91	• Medium consump-tion and waste.	1.37	• Low consumption and waste.	0.09
Annual tonnes of GHG emissions per person						
	16.25		**8.23**		**1.34 ***	
	Room for improvement!		**Almost there!**		**Way to go!**	

*It's not zero, but once you've got this low, consider focusing on helping others shrink their emissions and working on collective carbon sequestration opportunities.

SAANICH.CA/CLIMATEPLAN

Sustainable Saanich



3.2

RATE YOUR HOUSEHOLD
CLIMATE CHANGE
CAUSES & MITIGATION

1. How much floor area for heating and cooling per person is in your home?

a. <50 m^2	3
b. 50-120 m^2	2
c. >120 m^2	1

2. How do you heat/cool your home?

a. Mostly renewable energy (e.g. solar, hydro, air-sourced heat pumps)	3
b. Combination of renewable energy and fossil fuels	2
c. Mostly fossil fuels (e.g. natural gas)	1

3. How many flights do you take in a year

a. One short range flight or none	3
b. One long-haul flight or 2-3 short range flights	2
c. More than 1 long-haul flights *(generates about 2-4 t of CO2, that's above the global average carbon footprint)*	1

4. % of your house shaded by trees in your yard or block in summer:

a. >60%	3
b. 30-60%	2
c. <30%	1

5. % of trips by foot/bike/bus in one week:

a. >60%	3
b. 30-60%	2
c. <30%	1

Add up the points. A higher score indicates a lower carbon footprint. Your subtotal score for *mitigation* at the household level is:

subtotal /15

3.2

RATE YOUR HOUSEHOLD
CLIMATE CHANGE
IMPACTS & ADAPTATION

6. What colour is your roof?

a. Light (reflecting heat)	3
b. Medium	2
c. Dark (absorbing heat)	1

7. How do you use and store water for you gardens?

a. Using roof rainwater capture (waterbutts) and rain gardens	3
b. Part of the garden is irrigated with tapwater	2
c. Garden fully irrigated with tap water	1

8. How many mature trees are on your property?

a. >3	3
b. 1-3	2
c. 0	1

9. How much green or pervious area ('worm habitat') is on your entire lot?
(Refer to page 10 for more information on the different habitats)

a. >40%	3
b. 20-40%	2
c. <20%	1

10. How much of what you eat do you grow by yourself?

a. I can make a green salad for an entire week	3
b. I can find some carrots and a potted mint plant	2
c. I don't grow any of my food	1

Add up the points. A higher score indicates more climate-proofedness. Your subtotal score for *adaptation* at the household level is:

subtotal /15

3.3

RATE YOUR BLOCK
CLIMATE CHANGE
CAUSES & MITIGATION

1. What is the most common house type?

a. Multi-story apartment	3
b. Multiple units on each lot *(e.g. duplex, townhouse, coach-house)*	2
c. Single family homes	1

2. % of homes on your block using solar panels:

a. >40%	3
b. 20-40%	2
c. <20%	1

3. % of cars on your block that are EVs, hybrids, or car-shares:

a. >40%	3
b. 20-40%	2
c. <20%	1

4. How far is your house to the closest public transit (e.g. bus) or local shops?

a. Very close (0-10 minutes of walking)	3
b. Fair distance (10-20 minutes of walking)	2
c. Far (over 30 minutes of walking)	1

5. What is the amount of tree canopy on your block?
(*Refer to page 14 for the "leaping squirrel quest"*)

a. >40% (more connected "squirrel habitat")	3
b. 20-40%	2
c. <20% (less connected "squirrel habitat")	1

Add up the points. A higher score indicates a lower carbon footprint. Your subtotal score for *mitigation* at the block level is:

subtotal /15

3.3

RATE YOUR BLOCK
CLIMATE CHANGE
IMPACTS & ADAPTATION

6. What type of trees are on your block?

a. Mostly large & mature trees	3
b. Mostly small ornamental trees	2
c. Very few trees are on my block	1

7. Do the trees on your block look healthy?

a. Yes (vigorous growth, dense foliage)	3
b. Somewhat/mixed	2
c. No (stunted, dried out, thin foliage)	1

8. What is the overall extent of impervious surface ("grey car & pigeon habitat")?
(*Refer to page 15 for "habitat mapping"*)

a. <30%	3
b. 30-60%	2
c. >60%	1

9. How many rain gardens and/or swales are on your block?

a. 3 or more	3
b. 1-2	2
c. None	1

10. % of homes growing food (visible from the street):

a. >40%	3
b. 20-40%	2
c. <20%	1

Add up the points. A higher score indicates more climate-proofedness. Your subtotal score for *adaptation* at the block level is:

subtotal /15

STEP 4: VISION YOUR FUTURE

Now that you know more about your block and home, you might have some ideas about making some improvements around your home. In this section, we will provide examples of visioning what you can do for your home and neighbourhood, with real-life and hypothetical examples - you can also try making your own "dream scenarios" using software such as Photoshop, GIMP, or the annotate function in Zoom.

In this exercise, you will learn how to change photos of your block/community, to share the ideas you have been talking about with your neighbours. Through the visioning examples, you can explore your block's potential future scenarios with climate change impacts and possible green and sustainable solutions, and see what your friends and neighbours think!

A cooler future with heat waves

New trees, shrubs & food garden

IMPROVED AIR QUALITY
Problematic gaseous pollutants are absorbed through the stomata [underside] of leaves.

ENERGY CONSERVATION
Natural cooling in summer from mature trees, and energy savings from roof insulation.

REDUCE FLASH-FLOODING
Improved water quality and reduced run-off due to vegetation and depaving.

REDUCTION IN NOISE POLLUTION
Natural buffer from noise of people and cars.

IMPROVED WILDLIFE HABITAT
Nesting and food sources.

IMPROVED APPEARANCES
Vegetation breaks up hard lines of built structures

ENHANCED PSYCHOLOGICAL WELL-BEING
Green spaces have been shown to lower stress levels.

INCREASED PROPERTY VALUE
5 to 25% increase in value with increased canopy cover.

4.1

VISION YOUR FUTURE
HOW TO VISUALIZE

Why do this? *To imagine what your yard or block will look like by using a visualization tool.*

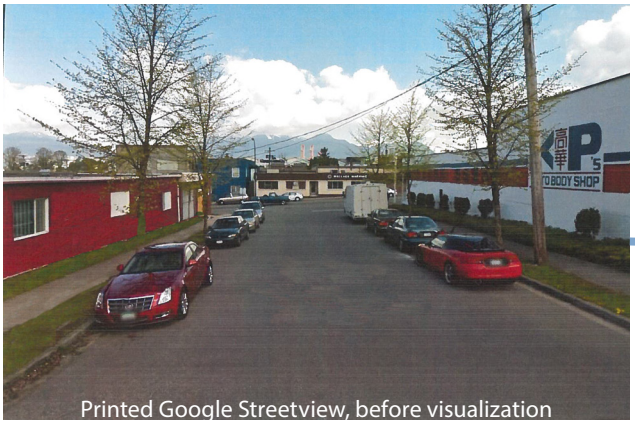
In this exercise, you will try to change photos of your block/community to share the ideas you have been talking about with your neighbours to see what your own future might look like with climate solutions.

If you have done the vulnerability mapping and/or the scorecard, please look back on them and think about things that you can do or changes that you want to see in your community to reduce risks, improve your score, and visualize them!

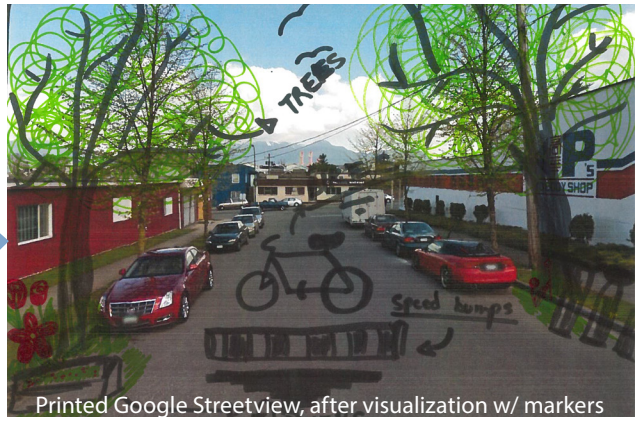
There are different ways to visualize your ideas:

- With markers (easiest and quickest)
- With photo editing programs such as Adobe Photoshop or GIMP (*https://www.gimp.org/*) or Zoom (using the Annotate feature)

Example: Visualizing with markers



Printed Google Streetview, before visualization



Printed Google Streetview, after visualization w/ markers

In this visualization, you can see several features are added to the existing scene, such as:

1. Larger trees with bigger canopy
2. Speed bumps
3. Bike lanes
4. Curb extensions for greening

You can add other features in your own visualization as you wish. See more examples on the next page to get you started!

VISION YOUR FUTURE
WHAT TO VISUALIZE

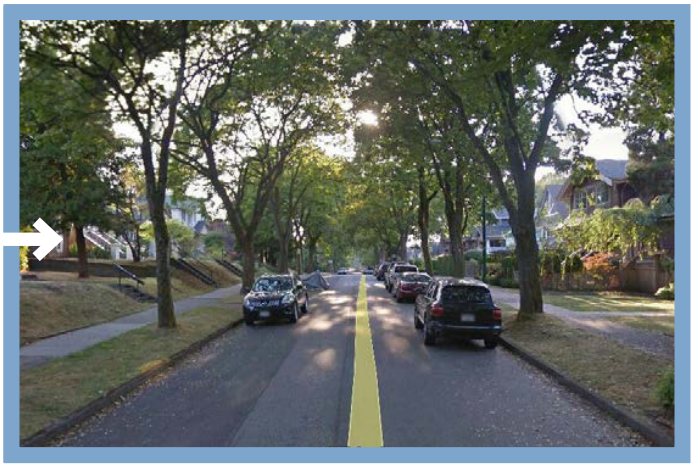
Examples of features to label and visualize

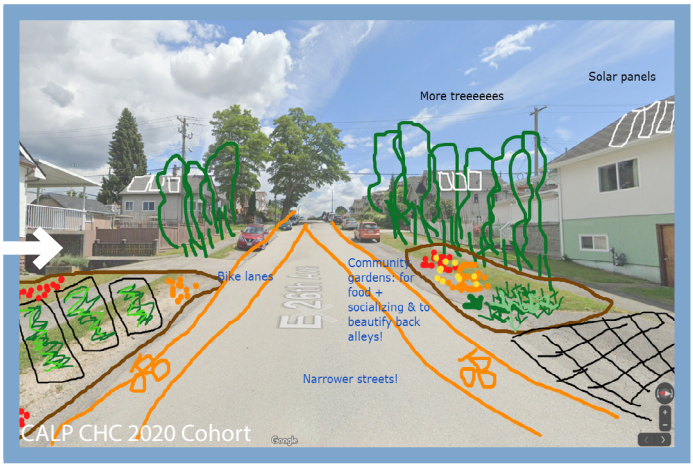
Unsustainable features (that we want to avoid if possible), such as:

- Lack of mature trees
- Wider streets to allow for more cars
- Potential flooding if close to sea level
- More street parking on your street

Sustainable features, such as:

- Greenspace (converted from hard pavement)
- A community garden or orchard
- Solar panels or other renewable energy equipment
- Bike lanes, bus stops, or electric vehicle charging stations





Existing scene (before)

Possible future (after)

VISION YOUR FUTURE
VISUALIZATION ACTIVITY

Activity: Draw over this neighbourhood location

In the space below, think about different ideas of how you would change this space to be more climate-resilient and pedestrian friendly. Draw over this Google Streetview of Monterey Ave with your ideas!

Activity: Draw your favourite or ideal place

In the space below, think about your favourite place in your neighbourhood and what it looks like when you are walking through it. Sketch its main physical features (e.g. roads, existing trees, sidewalks, etc) of the area, and draw over it with your ideas to make it more climate-resilient!

STEP 5: ACT ON THE GROUND

Now that we know the urgency of fighting climate change and the importance of urban trees in climate-proofing our communities, how can you take action together with others?

This section provides you tips and external resources on what you can do to help.

5.1. **ACTION MENU -** 5 action areas and "Big Moves" for private and/or public land
5.2. **PRIORITIZE AND MAKE A PLEDGE** to determine your climate action goals
5.3. **CRAFT YOUR OWN ACTION PLAN** to identify your next steps
5.4. **GET INVOLVED** with your neighbours in Oak Bay
5.5. **TIPS FOR TREE PLANTING** locally
5.6. **ADDITIONAL RESOURCES** to learn more about climate change in your area

ACTION MENU
ECOSYSTEMS & INFRASTRUCTURE

Healthy ecosystems & resilient green infrastructure

Improve and sustain Oak Bay's ecological assets and benefit environmental restoration by increasing tree canopy cover, improving drainage, reducing pollution, etc. Adapt Oak Bay's infrastructure to withstand drought, heat, and floods.

Replacing Asphalt Hardscape

Consider replacing hardscape with vegetation or use permeable materials for paved areas where possible to minimize the amount of impervious surface and increase the natural infiltration of rainwater.

Building Raingardens

Rain gardens are landscaped areas with absorptive soil/compost and a gravel underlay that can help reduce flooding while improving water quality.

Planting Trees on Private Land

Encourage tree planting and protection on private land to meet tree canopy cover goal of 40%.

Stewardship of Existing Trees (Public & Private)

Promote environmental stewardship and management of the urban forest to enhance and support healthy tree canopy.

ACTION MENU
HOMES AND BUILDINGS

Energy-efficient low-carbon homes

Commmunity Health and Resilience benefits:

- Enhancing health and well-being/comfort
- Improving air quality and reducing GHGs
- Reducing energy and infrastructure costs
- Reducing risks to lives and property
- Increasing energy security

Oak Bay OCP p.36

"The Regional Growth Strategy sets a target of reducing community greenhouse gas emissions by 61% (from 2007 levels) by 2038." (Approximately 50% by 2030)

Oak Bay OCP p.35

Electrification

Consider switching from oil furnaces or natural gas to reduce carbon footprints, e.g. air source heating/cooling pumps.

Renewable energy alternatives

Encourage energy independence by installing solar panels, electric vehicle chargers, and other emerging systems to power your household.

Energy efficient retrofits

Consider improving the energy efficiency of your home by minimizing winter heat loss through insulation, reducing solar heat gain in summer through double/triple glazing and white roof installation, sealing leaks, and shading sunny facades with deciduous trees. Not only will this conserve energy, but long-term costs too!

Several incentive and rebate schemes are available. See **Saanich Climate Action Guidebook** page 14-15. https://www.saanich.ca/assets/Community/Documents/Planning/sustainability/Climate-Guidebook.pdf#page=14

ACTION MENU
TRANSPORTATION

Low-carbon, safe, healthy transportation

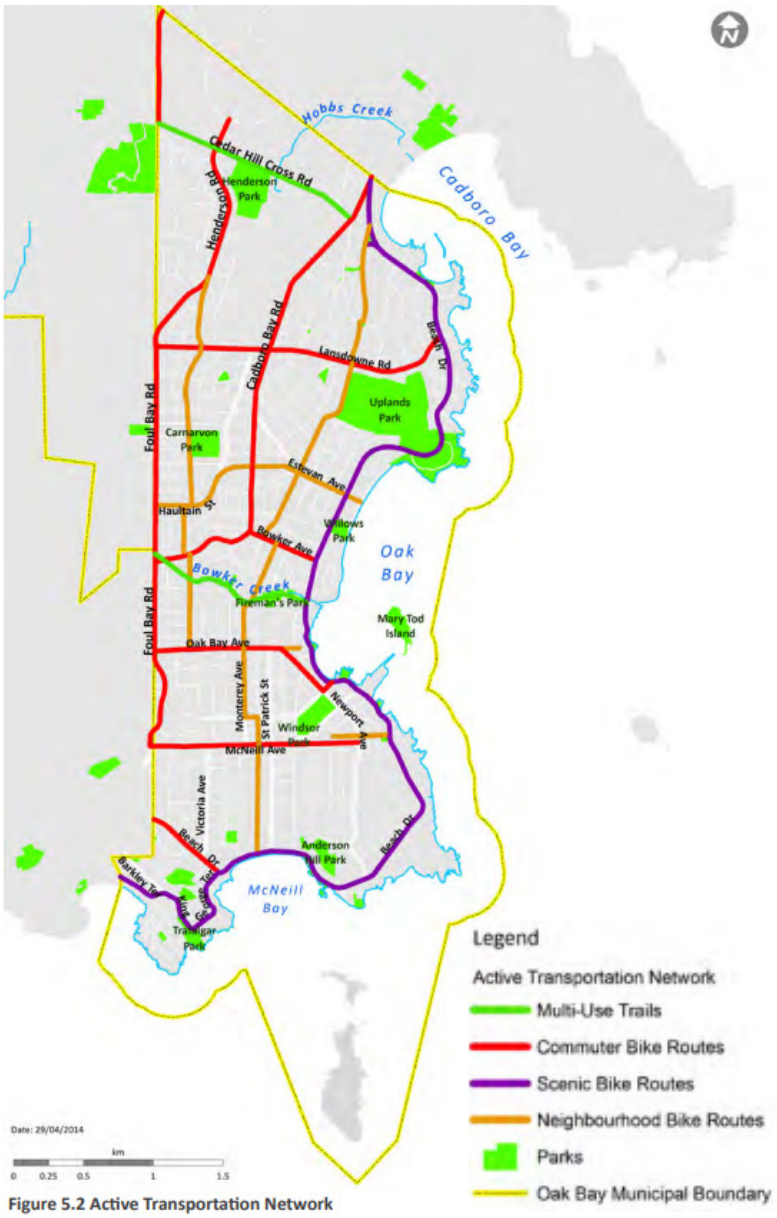


Figure 5.2 Active Transportation Network

Oak Bay OCP p.138

Transportation Mode	Oak Bay Daily Mode Share	CRD Daily Mode Share
Auto - driver	49%	64%
Auto - passenger	12%	13%
Pedestrian	29%	13%
Public transit	5%	6%
Bicycle	4%	3%
Other modes	1%	1%

Oak Bay OCP p.129

Figure 5.1 Origin and Destination Studies, 2011
Source: Capital Regional District

"The Regional Growth Strategy includes a target of 42% of all trips within the regional transportation system as made by walking, cycling and transit. Oak Bay's compact nature and topography makes it easily accessible for walking and biking."

Oak Bay OCP p.33

Active transportation

Consider integrating active transportation into your day-to-day to support the environment and a healthy active lifestyle.

Shared mobility and transit

Consider carpooling, taking public transit, or even walking in groups to school, work, or an event.

Electric vehicles and chargers

Consider switching to electric bikes or cars to reduce carbon emissions, pollution, and noise.

See **Saanich Climate Action Guidebook** page 12-13.
https://www.saanich.ca/assets/Community/Documents/Planning/sustainability/Climate-Guidebook.pdf#page=12

ACTION MENU
GARDENING PRACTICES

Healthy, sustainable gardening

Pollinator-friendly gardens

Consider plantings designed to attract pollinating insects and create pollinator corridors in your neighbourhood to enhance biodiversity.

Reduce lawns

Consider replacing some lawn area with native plant gardens for trees and flowers to add beauty, biodiversity and natural cycling of leaf litter. Reduce how often you mow lawns and switch to electric mowers and leaf-blowers, to reduce carbon emissions.

Be water-wise

Consider installing a rain barrell or cistern to collect water and use in your garden. Select drought resistant plants in areas which are dry in the summer to reduce watering and use of quick-release fertilizers.

Food gardens & food forests

Consider growing vegetables and fruit in your home garden to reduce your food miles, support access to local food and advance food security.

Guidelines and Resources: *https://www.oakbay.ca/our-community/urban-agriculture/gardens*

ACTION MENU
LIFESTYLE

Sustainable lifestyle changes

Consumption of goods and services, your buying habits, long-distance travel, and how you manage your waste will affect your carbon footprint.

We encourage you to routinely check your carbon footprint to track your progress - there will be months that will be slightly higher but a general decreasing trend shows you're on the right track!

Small lifestyle changes can not only help you minimize your carbon footprint, but there are many health benefits that come with this.

Plane-flights

Reducing the amount of travel you do by air will lower your personal carbon footprint. Consider travelling locally or other travel methods.

Responsible consumption

Consider buying more local products, reducing food and water waste, and supporting sustainable design and the circular economy.

Reuse and recycle products

Consider using reusable products or purchasing second-hand items when possible and remember to recycle. Donate your items that may still be in good condition to extend its life!

For more tips on lifestyle, see **Saanich Climate Action Guidebook** page 16. *https://www.saanich.ca/assets/Community/Documents/Planning/sustainability/Climate-Guidebook.pdf#page=16*

5.2

ACTION PLAN
PRIORITIZE & MAKE A PLEDGE

Review previous exercises to help identify vulnerabilities, prioritize the ideas you have from your visioning and scorecard, and consider your Big Moves. What goals are you planning to achieve on your climate action journey? Are they about preparing your house for climate change, or protecting trees in your yard or block?

We suggest making 3 pledges to diversify the short-term and long-term goals you are setting to include individual or household actions and collective action with your friends and neighbours!

ACTION MENU OF BIG MOVES

- ☐ Healthy **ecosystems** & resilient green **infrastructure**
- ☐ Energy-effcient low-carbon **homes**
- ☐ Low-carbon, safe, healthy **transportation**
- ☐ Healthy, sustainable **gardening**
- ☐ Sustainable **lifestyle** changes

I pledge

GOAL #1 *Cut your own carbon footprint by....*

What is your goal?

Why is this important?

How is success measured?

GOAL #2 *Take an initial climate action with others to....*

What is your goal?

Why is this important?

How is success measured?

GOAL #3 *Take further climate actions by 2030, including...*

What is your goal?

Why is this important?

How is success measured?

5.3

ACT ON THE GROUND
CRAFT YOUR OWN ACTION PLAN

1. Remember to make sure your goal is SMART (Specific, Measurable, Actionable, Realistic and Time-bound)!
2. List specific actions you need to take, and explain how these would achieve your goal.
3. List the resources you need to complete the actions.
4. Stress-test your plan - identify potential obstacles and generate solutions for overcoming these obstacles.

Action steps

	GOAL #1	GOAL #2	GOAL #3
Identify **specific actions** to take			
How will these actions help achieve your goal?			
What **resources** do you need to complete these actions?			
Anticipate **obstacles** and potential **solutions**			
When is my **deadline** to complete these actions?			

ACT ON THE GROUND
GET INVOLVED

Consider getting involved with one or more of the following organizations and communities! **You can volunteer with:**

Friends of Uplands Park

Friends of Uplands Park
Creating opportunities for stewardship, education and inspiration

https://friendsofuplandspark.org/

Support the Uplands Park ecosystem through stewardship, education and creative opportunities.

Oak Bay Community Association

Community Association of Oak Bay
Connect.Communicate.Collaborate

http://oakbaycommunityassociation.org/

Join to get involved in important social, cultural, environmental and community issue's in Oak Bay.

Friends of Bower Creek

Friends of Bowker Creek

Bowker Creek
URBAN WATERSHED RENEWAL INITIATIVE

https://bowkercreek.org/

Support the restoration and enhancement of Bowker Creek and its watershed to a healthy state.

Oak Bay Climate Force

https://facebook.com/groups/oakbayclimateforce

Engage with citizens and the District of Oak Bay to implement climate change solutions for the future of the community.

Friends of the Brighton Walkway

Support the restoration of the Brighton Walkway through nurturing native plants and rebuilding native habitats.

You can also get involved with:

- **Local schools**
- **Local faith groups**
- **Local youth groups**

ACT ON THE GROUND
TIPS FOR TREE PLANTING

How to pick an appropriate tree ?

Why do this? *To plant trees that are easy to maintain and able to survive the future impacts of climate change*

Small canopy trees (25m² per tree)


Photo source; Monrovia Nursery

Cornus x 'Venus'

Venus dogwood

- A spectacular, hybrid with exceptionally large, white, flower-like bracts.
- Attractive red ornamental fruit appears and attracts birds in the fall. The glossy green foliage has wonderful red fall color.
- This vigorous selection has notable winter hardiness, good drought tolerance, and excellent disease resistance.

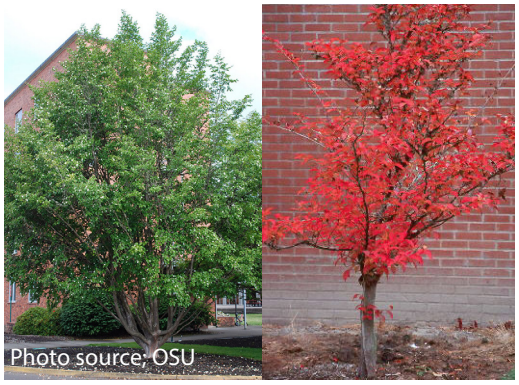


Photo source; OSU

Stewartia pseudocamellia

Japanese stewartia

- Lovely, Camellia-like blooms with white petals and orange centers highlight fresh green leaves.
- Foliage turns bronzy-purple in fall. Has mottled bark as it matures.
- This is an all season performer. Deciduous.

Medium canopy trees (50m² per tree)


Photo source; Gardenworks

Gleditsia triacanthos

Honey locust

- Brilliant yellow foliage
- Relatively low maintenance tree, virtually pest free. It requires little if any pruning and once established is very drought tolerant.
- It is also highly tolerant of pollution and environmental salt.

ACT ON THE GROUND
TIPS FOR TREE PLANTING

(continued medium canopy trees)

Magnolia kobus
Kobus magnolia

- Dark green foliage throughout the season. Large pointy leaves turn yellow in fall. Fragrant white star-shaped flowers.
- This tree casts open shade making it possible to garden under the canopy. Roots are not aggressive.
- Adaptable to clay, loam or sand soils. Well-established plants can be moderately drought tolerant.

Large canopy trees (125m2 per tree)

Photo source; Oak Harbor Garry Oak Society

Quercus garryana
Garry oak

- BC native decidiuous tree. Thick, grooved, scaly bark, with deeply lobed leaves.
- A great tree for our changing climate and an excellent tree for carbon sequestration.
- Excellent drought tolerance and a tree that has a beautiful winter silhouette.

Quercus coccinea
Scarlet oak

- Dark green foliage throughout the season. Magnificent fall colors from late fall through early winter when most other trees have lost their leaves.
- Impressive shade tree that should be grown in full sunlight.
- Excellent drought tolerance and carbon sequestration.

For a more comprehensive list of recommended plants including conifers, visit
The District of Oak Bay's Trees Protection Bylaw
https://www.oakbay.ca/sites/default/files/Tree-Protection-Bylaw-4742_0.pdf

5.6

ACT ON THE GROUND
ADDITIONAL RESOURCES

Here are some additional resources that you may find interesting. Reading materials refer to resources that contain articles or documents, while online or interactive tools involve clicking around exploration of different information resources..

- **Bowker Creek Blueprint: A 100-year plan to restore the Bowker Creek Watershed (2011):**
  https://www.crd.bc.ca/docs/default-source/es-watersheds-pdf/bowker-creek/bowker-creek-blueprint-2011-full-doc.pdf
  Learn more about the Bowker Creek Watershed management plan.

- **Bowker Creek Homeowner's Guide:**
  https://www.crd.bc.ca/docs/default-source/initiatives-pdf/bci-pdf/brochures/bci-homeowners-guide.pdf
  Learn more about the role of Bowker Creek as a community amenity and a ecological system, and what we can do as homeowners to care for the watershed.

- **CRD Water Services: A Homeowner's Guide to Outdoor Water Use**
  https://www.oakbay.ca/sites/default/files/our-community/CRD%20Outdoor%20Water%20Use%20Guide.pdf
  Get the most of of your garden while being water-wise!

- **Oak Bay Official Community Plan (OB OCP) (2020):**
  https://www.oakbay.ca/sites/default/files/ocp/2020-OCP.pdf
  The OCP represents Oak Bay's community vision for the future and provides a frameworth to guide growth and decisions about the use and management of land and water resources in the municipality

- **Residents' Climate Action Guidebook: 100% Renewable Resilient Saanich**
  https://www.saanich.ca/assets/Community/Documents/Planning/sustainability/Climate-Guidebook.pdf
  Find out what Saanich is doing as a district and community to tackle climate change.

- **The District of Oak Bay's Trees Protection bylaw**
  https://www.oakbay.ca/sites/default/files/Tree-Protection-Bylaw-4742_0.pdf
  Learn more about Oak Bay's bylaw to regulate the cutting and protection of trees. Here you can also find a comprehensive list of recommended trees suitable for Oak Bay's current and future climate.

- **Urban Forestry Strategy**
  https://www.oakbay.ca/sites/default/files/recreation/documents/final-report-new.pdf
  Learn more about Oak Bay's vision to protecting and enhancing its urban forest legacy.

CONGRATULATIONS!

(FULL NAME)

HAS COMPLETED ALL COOLKIT STEPS!

Starting date:

Finishing date:

Wow - you have finished the Coolkit!

How do you feel? What did you learn from this journey?

Let us know your thoughts by contacting:

THE DISTRICT OF OAK BAY

General: *coolkit@oakbay.com*

Chris Hyde-Lay, Manager of Parks Services: *chyde-lay@oakbay.ca*

OR

UBC COLLABORATIVE FOR ADVANCED LANDSCAPE PLANNING

CALP: *calpforestryubc@gmail.com*

ACKNOWLEDGEMENTS

For the original Citizen's Coolkit by the UBC Collaborative for Advanced Landscape Planning, please visit: *https://calp.forestry.ubc.ca/home/urban-forestry-toolkit*

UBC CALP