

OAK BAY COOLKIT

FOR NEIGHBOURHOOD ACTION ON CLIMATE CHANGE

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

November 2021





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%)



- Increasing the tree canopy to 40%, especially in lower canopy neighbourhoods
- Aging out of big trees and stormwater upgrades impacting trees

Walkability

Daily Mode Share: 29%



- Better network of bike paths

Cycling

Daily Mode Share: 4%



- Behaviour change e.g. carbon budgets for plane flights
- Switching to active transport, public transit, electric bikes, car shares, EVs

Electric Vehicles (EVs)



- Switching gas and oil furnaces to electric heat/cooling pumps
- Climate proofing/adapting existing properties
- Limit new development building footprints, impervious area, tree removal

Neighbourhood Character



Ecological Restoration of Parks and Natural Areas



- Ecological restoration on private land and maybe streets



COOLKIT AT A GLANCE



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

INTRODUCTION

Introduction, climate change, and Oak Bay's urban forests

How to use the Coolkit?
Why bother about Climate Change?
How can Urban Forests help?
How can Renewable Energy help?

PAGE

1 START A CONVERSATION

Meet your neighbours, test your knowledge

- 1.1 Signs of Climate Change
- 1.2 Story Collection
- 1.3 Photo Collection

2 MAP YOUR COMMUNITY

Get to know your block and see it in a new way

- 2.1 Urban Forest Quest
- 2.2 Habitat Mapping
- 2.3 Vulnerability Mapping
- 2.4 Climate Change Detective Quest

3 RATE YOUR BLOCK

Rate how sustainable your household & block are

- 3.1 Calculate your Footprint
- 3.2 Rate your Household
- 3.3 Rate your Block

4 VISION YOUR FUTURE

What might your block look like in the future?

- 4.1 How to Visualize
- 4.2 What to Visualize
- 4.3 Visualization Activity

5 ACT ON THE GROUND

Identify priorities and implement strategies

- 5.1 Action Menu
- 5.2 Prioritize & Make a Pledge
- 5.3 Craft your own Action Plan
- 5.4 Get Involved
- 5.5 Tips for Tree Planting
- 5.6 Additional Resources



HOW TO USE THE COOLKIT ?

Scope

This booklet aims to help you climate-proof your neighbourhood while improving the urban forest that surrounds 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 (**calpubc**) to keep an eye on upcoming events and share your ideas under the posts.

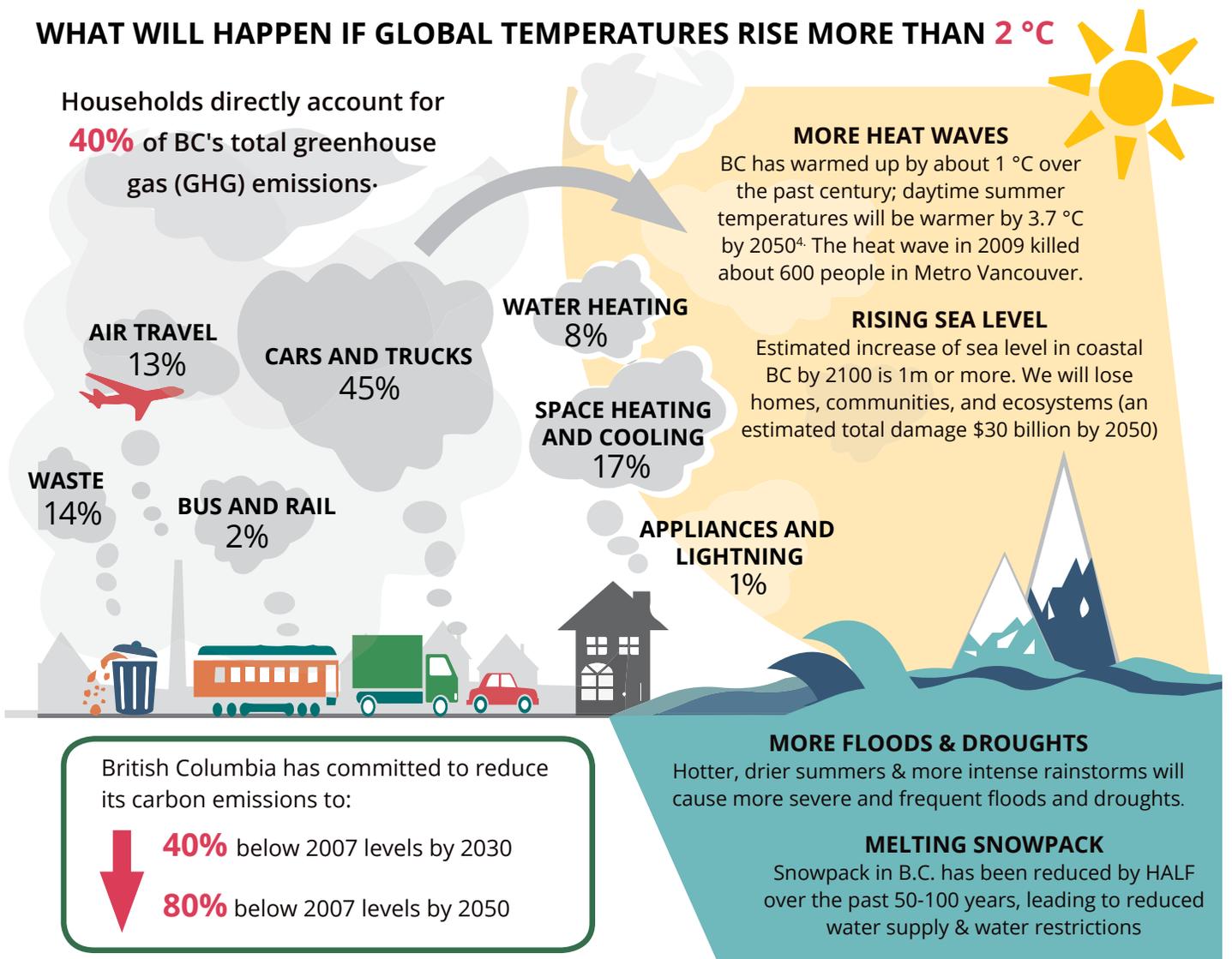


WHY BOTHER ABOUT CLIMATE CHANGE ?

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



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.

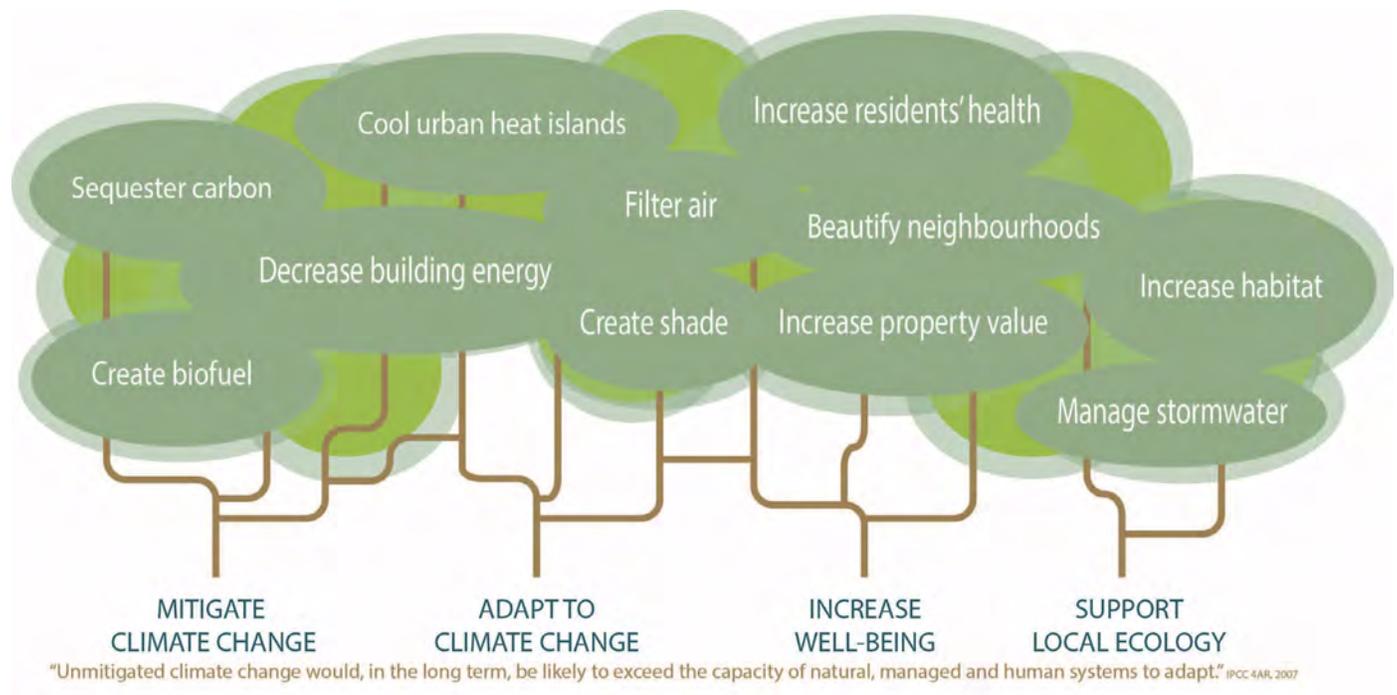


HOW CAN URBAN FORESTS HELP ?

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

29% Commercial and Mixed use

42% Community and Institutional

28% Established Neighbourhoods

35% Parks and Open Spaces

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



Recycling



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. **SIGNS OF CLIMATE CHANGE** on your block
2. **STORY COLLECTION** to recognize the changes in your neighbourhood
3. **PHOTO COLLECTION** to record and reflect on things you value in your block



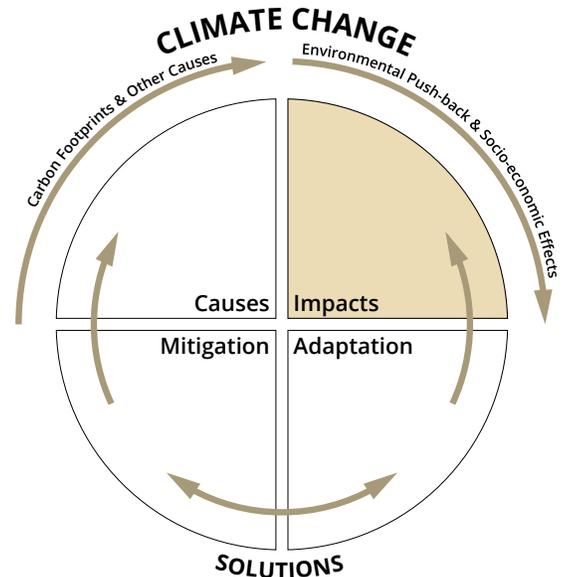


START A CONVERSATION SIGNS OF CLIMATE CHANGE

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





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 ALL 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

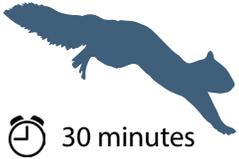
Do you know much about the trees on your block? Have you ever tried to inventory important things on your block and consider their links to climate change? Do you live on a high carbon or low carbon block? The activities in this section will help you see your surroundings in a new way, and learn to use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

1. **URBAN FOREST QUEST** allows you to investigate “squirrel habitat” (tree canopy) and other features of your urban forest
2. **“HABITAT” MAPPING** in your block to see how green or grey it is and where it could be improved
3. **VULNERABILITY MAPPING** allows you to find parts of your block which would be under the greatest threat from climate change
4. **CLIMATE CHANGE DETECTIVE QUEST** allows you to investigate “car habitat” and other signs of climate change





MAP YOUR BLOCK URBAN FOREST QUEST



30 minutes

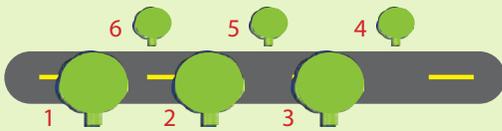
DO YOU KNOW...

- 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: _____

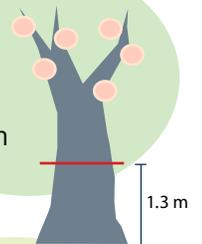
Total # of trees in gardens: _____

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!





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.

You will need:

🕒 0.5-1.5 hours

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 9), 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



MAP YOUR BLOCK VULNERABILITY MAPPING

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

You will need:

 1-1.5 hours

- 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 change²⁶. 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.

Procedure

1. Print out an aerial photo of your block (8.5x11 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 3 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 10 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





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 overflow 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



MAP YOUR BLOCK CLIMATE CHANGE DETECTIVE QUEST



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

30 minutes

CASE 1: TRANSPORTATION

Difficulty ★

- How many cars are on your block? Total: _____
 - 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: _____
- 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 ★★

- 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: _____
 - How many households are growing food (vegetables, fruit...)? Total: _____
- *% of food gardens on your block:
Divide your Q2 answer with Q1! Total: _____
- 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 ★★★

- How many buildings have solar panels on their roofs? Count the number of buildings with solar panels. _____
- 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 two SCORECARDS to let you assess whether your block is prepared 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!

1. **CALCULATE YOUR FOOTPRINT** to find out how big your personal climate impact is
2. **RATE YOUR HOUSEHOLD** to evaluate your home's impact on our planet's climate
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 Rath Trevor 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						
	<ul style="list-style-type: none"> • Heavy on beef, cheese, and other animal foods. • Significant food waste/spoilage 	3.02	<ul style="list-style-type: none"> • Most animal protein from poultry/pork/fish, with less beef and cheese. • Moderate food waste/spoilage. 	1.55	<ul style="list-style-type: none"> • 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 consumption 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.



RATE YOUR HOUSEHOLD

CLIMATE CHANGE

CAUSES & MITIGATION



RATE YOUR HOUSEHOLD

CLIMATE CHANGE

IMPACTS & ADAPTATION

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

- a. <50 m² 3
- b. 50-120 m² 2
- c. >120 m² 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. More than 1 long-haul flights 3
(generate about 2-4 t of CO₂, that's above the global average carbon footprint)
- b. One long-haul flight or 2-3 short range flights 2
- c. One short range flight or none 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

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-proofness. Your subtotal score for *adaptation* at the household level is:

subtotal

/15



3.3

RATE YOUR BLOCK

CLIMATE CHANGE

CAUSES & MITIGATION



3.3

RATE YOUR BLOCK

CLIMATE CHANGE

IMPACTS & ADAPTATION

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. Very far (over 30 minutes of walk) 1

5. What is the amount of tree canopy on your block?

- a. >40% (check page 9 for the 'leaping squirrel quest') 3
- b. 20-40% 2
- c. <20% (little connected squirrel habitat) 1

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)?

- 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

22

subtotal

/15

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

subtotal

/15

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



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.





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



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 next page to get you started!



VISION YOUR FUTURE WHAT TO VISUALIZE

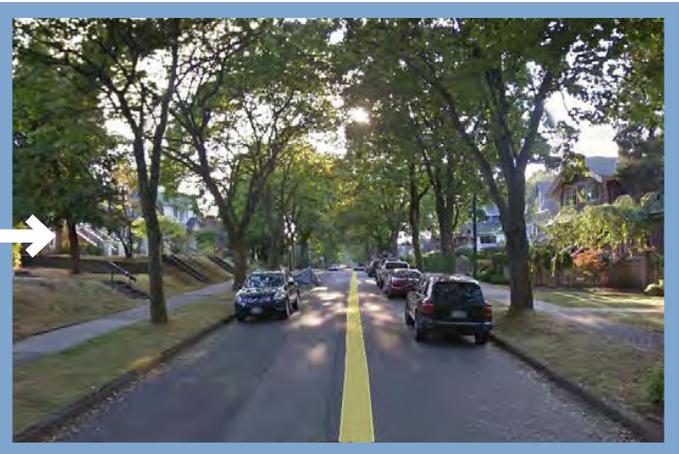
Examples of features to visualize

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

Possible future



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 combating climate change, and the importance of urban trees in climate-proofing our communities, how could you take action together?

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

1. **ACTION MENU** - 5 action areas and ideas on private and/or public land
2. **PRIORITIZE AND MAKE A PLEDGE** to determine your climate action goals
3. **CRAFT YOUR OWN ACTION PLAN** to identify your next steps
4. **GET INVOLVED** with your neighbours in Oak Bay
5. **TIPS FOR TREE PLANTING** locally
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 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

Community Health and Resilience: Climate Change and Energy

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

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."

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.

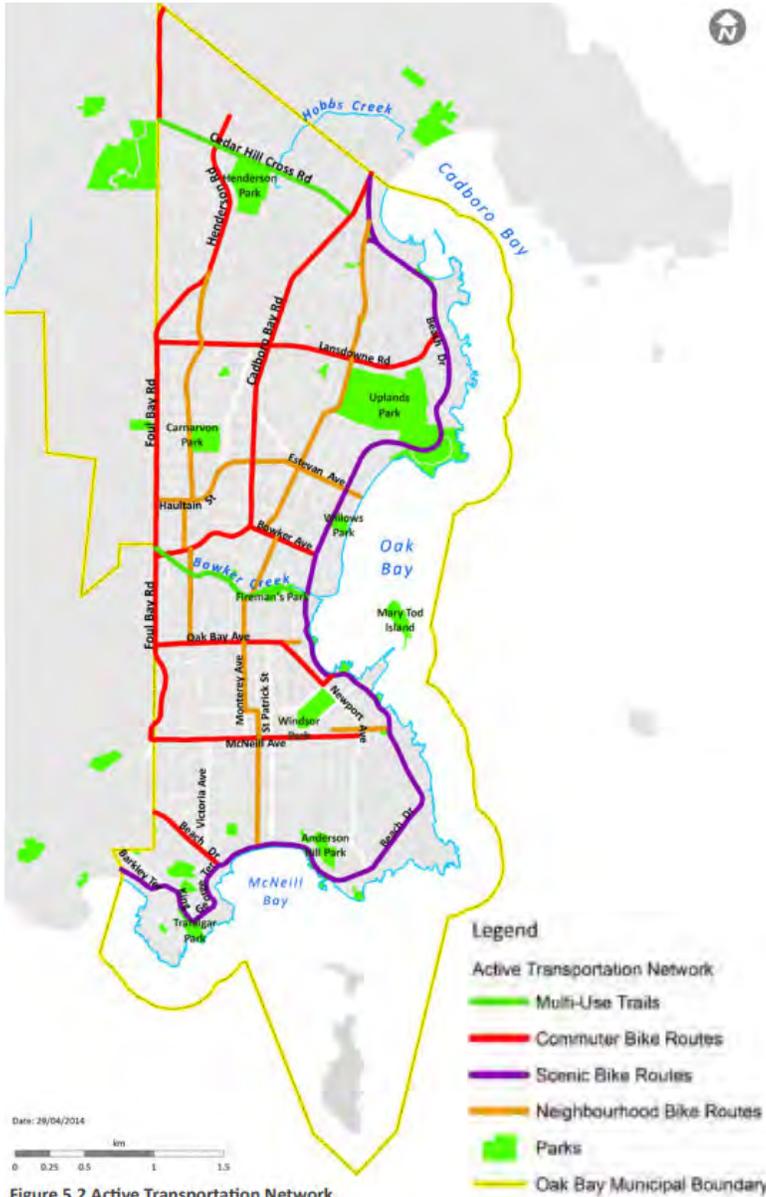
Energy efficient retrofits

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 facades with deciduous trees. Not only will this conserve energy, but long-term costs too!



ACTION MENU TRANSPORTATION

Low-carbon, safe, healthy transportation



“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.

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



Healthy, sustainable gardening

Pollinator-friendly gardens

Consider plantings designed to attract pollinating insects and help them flourish in your garden to enhance biodiversity.



Reduce lawns

Consider replacing some lawn area with native plant gardens for trees and flowers to add beauty and important ecological benefits. Reduce how often you mow lawns as this releases more carbon emissions that grass absorbs.



Be water-wise

Consider installing a rain barrel 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, forest, orchards

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





ACTION MENU LIFESTYLE

Sustainable lifestyle changes

Consumption of goods and services, 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

Consider significantly reducing the amount of travel you do by air to reduce your personal carbon footprint.



Responsible consumption

Consider reducing food and water waste and supporting sustainable design and circular economy.

Reuse and recycle products

Consider avoiding single-use products and remember to recycle.





ACTION PLAN PRIORITIZE & MAKE A PLEDGE

Review previous exercises to help identify vulnerabilities and prioritize the ideas you have from your visioning and scorecard.

5.1 ACTION MENU

- A| Healthy **ecosystems** & resilient green **infrastructure**
- B| Energy-efficient low-carbon **homes**
- C| Low-carbon, safe, healthy **transportation**
- D| Healthy, sustainable **gardening**
- E| Sustainable **lifestyle** changes

What goals are you planning to achieve? Are they about preparing your house for climate change, or protecting trees in your yard or block?

Make 3 pledges and try to diversify the types of goals you are setting to include individual or household actions and collective action with your friends and neighbours!

I PLEDGE:

GOAL 1

WHAT is your goal

ACTION MENU #

RATIONALE

WHY is this important?

METRICS

HOW is success measured?

GOAL 2

WHAT is your goal

ACTION MENU #

RATIONALE

WHY is this important?

METRICS

HOW will you measure success?

GOAL 3

WHAT is your goal

ACTION MENU #

RATIONALE

WHY is this important?

METRICS

HOW will you measure success?



ACT ON THE GROUND CRAFT YOUR OWN ACTION PLAN

1. Remember to make sure your goal is 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



<https://friendsofuplandspark.org/>

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

Oak Bay Community Association



<http://oakbaycommunityassociation.org/>

Join to get involved in important social, cultural, environmental and community issues in Oak Bay.

Friends of Bowker Creek



<https://bowkercreek.org/>

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

Oak Bay Climate Force



<https://www.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



5.5 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 and good drought tolerance.



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 deciduous 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, visit

The District of Oak Bay's Trees Protection Bylaw

https://www.oakbay.ca/sites/default/files/Tree-Protection-Bylaw-4742_0.pdf



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>

